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The Comparative Effects of the UK and Norwegian Oil Taxation Systems on Profitability and Government Revenue

Jon R. Morgan and Colin Robinson

1 Introduction

The Paymaster General, Mr. Dell, when referring to a press article during the report stage of the passage of the Oil Taxation Bill through the House of Commons, had this to say in comparing the UK and Norwegian fiscal proposals for the North Sea:

An editorial in the *New Statesman* suggested that the Norwegians would achieve a 75 per cent take on average from their proposal. We do not believe those figures to be true of the Norwegian tax proposals. With all the uncertainties which operate when one calculates the effect of different tax systems – I am talking not of special taxes so much as the total tax and related system – that operates throughout – we believe that our take is comparable with the Norwegian take and possibly a little higher.¹

Such a view is difficult to reconcile with Press views at the time which ranged from 'the best compromise obtainable under the circumstances and one which is a good deal better than most had expected'² to (under a heading of 'UK Government's "give away" tax') 'the oil companies operating in the North Sea can chalk up another victory over a European Government'.³

This brief review of the tax legislation in the UK and Norway attempts to compare the two systems quantitatively and to examine their relative performances under a wide range of key assumptions. Since it is known that the UK Government co-operated closely with the Norwegian government in drawing up the tax proposals it is not surprising that over a fairly wide range the systems produce remarkably similar results.

We do not propose to suggest in this review exactly what should constitute an equitable government share

of the profits from North Sea operations, whether alternative schemes designed to remove 'rent' accruing to the operators might not have been more effective, or even whether alternative techniques such as auctioning of production licences might not have rendered additional taxes on profits unnecessary. Such issues require a much broader perspective on public policy whereas the present analysis is directed solely at uncovering the operations of the now established systems.⁴

2 The UK and Norwegian tax structures

The UK Oil Taxation Act (1975) set up, *inter alia*, a new tax, the Petroleum Revenue Tax (PRT) which is chargeable on a field by field basis at a rate of 45 per cent on assessable profits. The assessable profits are calculated after deducting allowable losses and, where applicable, a share of a revenue equivalent of an oil allowance. The tax is subject to an overriding annual limit related to the return on capital employed in an oilfield. PRT is levied twice yearly and the tax is liable for payment four months after the close of a period. It is deductible in the calculation of corporation tax liability.

The Norwegian Special Tax was introduced to the Storting in Odelsting Proposition No. 26 on February 14, 1975 superseding an earlier proposal which was withdrawn on 13 December, 1974. The proposals, which with some minor modifications have now passed into law, provided that the Special Tax shall be levied on the same assessable profit as for Norwegian Corporation Tax. The Special Tax approximates to an 'excess profits' tax levied (after deduction of a special allowance) at the rate of 25 per cent,

¹Official Report, 19 March 1975, c. 1664-5.

²Financial Times, 12 April, 1975.

³Petroleum Times, 7 March 1975, p. 3.

⁴The authors have, however, attempted a broader examination of public policy on the controversial issue of depletion controls: see Colin Robinson and Jon Morgan, 'Economic Consequences of Controlling the Depletion of North Sea Oil and Gas', Trade Policy Research Centre, Guest Paper No. 3, January 1976.

and calculated on a company rather than a field basis. However, extraneous losses cannot be offset against the profits of continental shelf operations and since capital allowances may not be claimed until the asset is brought into 'ordinary use' special tax assessment is effectively on a field by field basis.

Whilst under both tax systems all royalties and associated licence fees are tax deductible there are a number of significant differences.⁵ First, the *treatment of allowable expenditure* for tax purposes differs. For PRT, categories of allowable expenditure are specified in considerable detail in the Act and where items are allowable they may be deducted against income of the chargeable period in which or shortly following which the expenditure was agreed by the Revenue. And in lieu of interest and other financing charges which are not allowable against profits for PRT, an 'uplift' of 75% is allowed on certain items of expenditure (mainly 'long-term' assets). In the Norwegian system there is no immediate write off of allowable capital expenditure and special categories of allowable expenditure are not detailed.

In computing the Special Tax liability on the same assessable profit figure as for corporation tax in Norway a *special allowance* in net income is granted. For any one year this is equivalent to 10% of the purchase value of all installations and equipment taken into use over the preceding 15 years. Where this amounts to more than the year's assessable profit the excess may be charged as a deduction when calculating the special tax in one or more of the subsequent years. For Norwegian tax, expenditure may be deducted over a period of not less than six years from and including the year in which the asset comes into ordinary use.

A second difference between the two systems concerns the *carrying forward of tax allowable losses*. For PRT, losses may be carried forward or backward indefinitely within the field; and upon abandonment of a field derogation of the field by field method of assessment is permitted to enable otherwise unrelievable continental shelf losses to be offset.⁶ For corporation tax, losses may be carried forward indefinitely and, whilst the ring fence prohibits the importation of non-ring fence tax allowable losses,

losses may be exported if the participator wishes. In the Norwegian system deduction of losses is subject to the following two rules:

- (i) Losses incurred may be carried forward for no more than 15 years.
- (ii) Only one-third of previous years' losses may be utilised in any one year.

Whilst in the Norwegian legislation, there is no exact counterpart of the 'ring fence' around continental shelf operations there is a limitation which prohibits deduction of expenditures incurred outside the country. Deduction from continental shelf profits of losses incurred in other petroleum and related activities either on the shelf or on land is limited to 50% of the tax allowable losses of such activities.

Third, there are potential differences in the *methods of determining oil values for tax purposes*. Both the Norwegian and the UK legislation allow for the determination of tax reference prices for oil transactions which are not undertaken at arms-length and in both countries there may well be practical difficulties in implementing this provision. In the UK where an arms-length sale takes place the sale price is to be used as the basis for tax assessment. In Norway 'norm' price determination is carried out in arrears and there is some concern that the imposed price could therefore be higher than the actual sales value.⁷

Finally, we may note some of the unique features of the UK system: the oil allowance and safeguard provisions. The *oil allowance* is a revenue sum equivalent to the participator's share of a field multiplied by a maximum of half a million long tons per chargeable period. It may only be deducted where the field has an assessable profit after deduction of all capital allowances, uplift, and any losses brought forward, and cannot be used to create a loss. To the extent that the allowance may not be claimed in earlier periods of a field's life it may be deducted from the profits of later years subject to an overriding total limit of ten million tons.

The *safeguard clause* in the Oil Taxation Act provides that the total annual amount of PRT payable is not to exceed 80% of the amount by which an adjusted profit figure for the year is greater than 30% of the accumulated capital expenditure at the end of that year. The adjusted profit is equivalent to the year's assessable profit plus the allowances

⁵For a more detailed analysis of the origins and development of the UK system see Jon Morgan, 'The Promise and Problems of Petroleum Revenue Tax', in *Proceedings of the Institute for Fiscal Studies Conference on the Taxation of North Sea Oil*, February 1976. For a review of the offshore taxation system in other countries see: E. S. Herpin and L. S. Bartlett, 'Taxation of the European Continental Shelf', *Journal of European Taxation*, July 1975, pp. 220-241.

⁶For example losses occurring through premature shut down of a field or abortive exploration expenditure.

⁷It is understood that 'norm' price determination may not be used for long-term gas contracts. The current dispute between Phillips Petroleum, operators of Ekofisk, and the Norwegian authorities over what the former regard as unrealistically high 'norm' prices may confirm the industry's apprehensions (cf. *Petroleum Economist*, April 1976, p. 148 and *Noroil*, May 1976, p. 157).

taken into account in calculating the profit which had qualified for uplift, and the uplift itself. The clause commonly has the effect of tapering the PRT liability to zero towards the end of a field's life.

3 Comparison between Norway and UK

Before we undertake a quantitative comparison between the UK and Norwegian tax systems a warning must be given. For besides the inherent uncertainty attached to abstracting 'model' oil fields when obviously each North Sea project differs in some respects from all others, we must also stress that we cannot hope to represent the full scope of the fiscal instruments available to each Government. Some issues in the simpler Norwegian system, for example, are still under review: the right to exempt distributed dividends from state tax is a particular example. Under the present system where a company elects to distribute the maximum amount of net income as dividends the government's 'take' could be reduced by over ten percentage points compared with a nil dividend situation. In the following examples, therefore, we compare the systems as they would appear to a foreign based company with subsidiary operations on the two countries' continental shelves. We assume that the maximum amount of net income is distributed and a withholding tax of 10% on such dividends is included in our Norwegian calculations⁸ though in Table 3 we show the effect of assuming nil dividends. A further point of caution concerns the timing of tax payments. In the UK for instance the 'ring fence' prevents tax deferral from non-UK oil extraction operations. But as additional UK continental shelf projects are undertaken tax payment may be significantly deferred.

In any comparison between the Norwegian and UK tax systems for offshore oil it is vital to stress the fundamentally different policy objectives of the two countries' governments at the time of the construction of the legislation. In the UK these objectives have been described as:

First encouraging the most rapid development and exploitation of our resources; secondly, assuming a proper UK participation both in terms of national participation and fiscal participation; thirdly to

encourage the continued presence of the international oil industry; and fourthly, further to encourage the development of an independent British industry within the UK.⁹

It is understandable, given these objectives, that the government should have felt it necessary to introduce at the Report stage of the Oil Taxation Bill the safeguard and oil allowance clauses which are clearly designed to help so-called 'marginal' fields and protect the industry as a whole from a fall in the world price of oil or escalation of development costs.¹⁰

Norwegian oil policy has a rather different emphasis in that the country has already discovered substantially greater quantities of oil than are necessary to achieve self sufficiency whereas a much lower proportion of the continental shelf is so far licensed. Since much of the Norwegian shelf production in the latter years of this decade will come from two field groups, the Ekofisk complex and giant Statfjord field in the North, public policy does not seem to have been primarily concerned to ensure that small high-cost fields on the shelf should be brought into production.¹¹

In the rest of this paper we assess the implications of the two tax systems for field profitability, under various price conditions and at various tax rates. First, however, we introduce the field models on which the analyses are based.

4 The hypothetical field models

From Section 3 it will be appreciated that the most important differences in operation between the two tax systems might be anticipated for the smaller, higher cost fields. To assess the impact of the two tax systems on fields of different sizes with different costs we have constructed four hypothetical field models whose recoverable reserves range from 200 to 700 million barrels.

In addition we include a comparison for the 'giant' Brent field. We should stress, however, that in our view the relative performance of the tax systems should be judged primarily in terms of their effect

⁹Official Report, 27 November 1974, c. 493.

¹⁰For a critical view of the returns from North Sea projects under alternative price scenarios see Colin Robinson and Jon Morgan, 'World Oil Prices and the Profitability of North Sea Oil', *Petroleum Review*, April 1976.

¹¹Norwegian oil policy was set out in great detail and with characteristic candour in *Petroleum Industry in Norwegian Society*, Parliamentary Report No. 25, Royal Norwegian Ministry of Finance, 1973-4. More recent reviews are contained in Report No. 81 to the Storting, Ministry of Industry, 1974-5, and Reports 90 and 91 (1976). For the authors' view of Norwegian oil policy see ref. in note 4.

⁸The distributed dividends are assumed to be remitted gross of any depreciation provision. In practice it is believed that the Norwegian authorities would permit the same depreciation provisions to be deducted from after tax income as are specified in calculating tax allowable depreciation. This could raise the Norwegian government's take under the base case assumptions by from 2% for the 700 field to nearly 6% for the 200 field.

TABLE 1
Model field specifications

PROJECT	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000	total ¹
PRODUCTION: THOUSAND DAILY BARRELS																										
200	0	0	15	40	50	50	50	34	31	28	25	23	20	18	16	15	13	12	11	0						165
300	0	0	20	50	80	80	80	56	50	45	40	35	31	28	25	22	20	18	16	14	12	11	0			267
500	0	0	0	25	75	125	125	125	107	94	83	73	64	57	50	44	39	34	30	26	23	20	18	16	14	463
700	0	0	0	40	125	180	180	180	158	137	119	104	90	79	68	59	52	45	39	34	30	26	22	20	17	659
OPERATING COSTS:⁴ MILLION DOLLARS																										
200	0	0	11	33	38	38	31	29	28	26	25	24	23	22	22	22	21	20	20	0						450 2.3 ²
300	0	0	14	38	49	49	41	38	36	34	33	31	30	29	28	28	27	26	26	25	25	24	0			654 2.2 ²
500	0	0	0	16	46	59	59	54	51	48	45	43	41	39	37	36	34	33	32	31	31	30	29	29		881 1.8 ²
700	0	0	0	19	53	63	63	59	55	52	49	46	44	42	41	39	38	37	36	35	35	34	34	33		971 1.4 ²
CAPITAL COSTS: MILLION DOLLARS																										
200	50	100	150	75	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					400 2.0 8000 ³
300	50	125	175	75	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			450 1.5 5625 ³
500	75	125	200	75	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500 1.0 4000 ³
700	75	150	225	100	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600 0.9 3333 ³

¹Total production achieved by 2000 in millions of barrels.

²\$/Barrel reserves.

³\$/Barrel peak production.

⁴First year of production is for six month period only with corresponding reduction in operating costs.

on the hypothetical fields since there appears to be only one other field (Statfjord) in the same class as Brent.

The four models are based on single platform developments starting in 1976. A detailed specification is recorded in Table 1 which is supplemented in Table 2 by a breakdown of the capital cost schedule for the 200 million barrel field. Operating costs for these fields are estimated at between \$15m and \$25m annual fixed costs plus between 50 cents and \$1.25 per barrel of production. We assume a constant tax reference price of \$12.50 barrel¹² in our 'base case' assessment (Table 3), though the effects of varying price are estimated later in the paper. We have not made any specific inflation allowance in the operating cost estimates, which may seem difficult to justify, more especially in the UK where price inflation, local shortages and currency movements have all combined to raise costs dramatically. However, there are signs that a 'learning curve' effect will cause costs to plateau off, albeit at a permanently higher level in real, as well as money, terms than prevailed two or three years ago. Our capital costs of development, ranging from £1,500 to £4,000/barrel of plateau daily pro-

duction,¹³ are broadly in line with industry estimates for single platform developments.

Table 3 compares DCF returns, using both Internal Rate of Return (IRR) and Net Present Value (NPV) criteria for the four fields and Brent under the two tax systems, using our 'base case' assumptions of 100% equity financing, that the North Sea oil price remains constant at \$12.50 per barrel, and that tax rates also remain as they are now.

All the NPV calculations shown in this paper use a 20% discount rate (after tax) which is intended as an approximation to the rate which an oil company assessing an oil production project might use. Since all our calculations are in current prices, the implied real discount rate is substantially less than 20%. In practice, discount rates will vary among companies, over time in a given company, and among different people in one company so selecting one rate may seem rather arbitrary. However, our results are also stated in terms of Internal Rates of Return and the broad conclusions of our analysis (as stated at the end of the paper) are not significantly affected by varying the discount rate.¹⁴

Bearing in mind the observation made earlier concerning the collaboration between the two countries it is nonetheless remarkable how similar are the government 'takes', which include royalties as well as taxes, over the range of field specifications analysed. The UK system yields a higher tax take for all field sizes and for Brent, but if we exclude the smallest field which pays no PRT at all, there is less than two percentage points difference between the respective government 'takes' for each field.¹⁵ Again, recalling the policy objectives outlined in the previous section, it is clear that the UK system does have the desired effect of imposing somewhat lower taxes on the earnings of small high cost fields and rather higher taxes on the larger fields with lower unit costs. However, the Norwegian system seems, if anything, to be rather more 'progressive' than the British, which is an unexpected result given the apparent differences between the two countries' policies towards encouraging the development of marginal fields.

TABLE 2

Breakdown of Capital Cost Schedule for the 200 million barrel field

	\$ million
5 exploration and appraisal wells (at \$4 million average)	20
1 Platform – structure	80
equipment	40
installation	30
development wells	55
sundry	30
Transportation or loading facilities (tanker loading)	50
Miscellaneous	25
	330

Assume 10% per annum inflation over 2 year period
for all expenditure **TOTAL = \$400 million**

¹³In the four model fields, unit costs decline as field size increases. This simple relationship is by no means true of all fields discovered so far in the North Sea but it suffices for the analyses presented here. Our capital costs are expressed in money of the day terms after making allowances for inflation.

¹⁴See Morgan, 'The Promise and Problems of Petroleum Revenue Tax', *op. cit.* (note 5 above).

¹⁵The qualifications of note 8 should be taken into account however. If we include a depreciation provision federal tax would be marginally higher and government take increased by between 1% and 2%. The alternative extreme of no dividend distribution is included in Table 3 and in the sensitivity analyses.

TABLE 3
Comparative returns under the UK and Norwegian tax systems for base case¹

Field	UK			Norway ³			Difference UK-Norway		
	IRR	NPV*	State take ²	IRR	NPV*	State take ²	IRR	NPV*	PRT/spec. take ²
	%	\$ million	%	%	\$ million	%	percentage points	%	percentage points
200	24.7	35.2	62.3	24.7	35.7	55.3	0.0	-1.4	7.0
300	34.3	127.9	64.2	32.9	124.1	62.4	1.4	3.1	1.8
500	31.8	174.0	67.5	32.6	196.0	66.6	-0.8	-11.2	0.9
700	40.1	333.8	69.6	40.4	368.2	68.2	-0.3	-9.3	1.4
BRENT	28.9	737.4	68.8	31.0	955.0	67.8	-2.1	-22.8	1.0
									4.3

¹North sea oil price is \$12.50 per barrel, corporation tax, PRT and Special tax, rates remain as in 1976.

²As percentage of sales revenue less capital and operating costs.

³Figures relate to projects where the maximum amount of net income is distributed as dividends. The following figures apply when no dividend distribution is made:

	IRR	NPV	State Take
	%	\$ million	%
200	20.7	5.0	67.5
300	28.8	76.7	71.8
500	29.1	129.2	74.2
700	37.0	277.1	75.2
BRENT	24.7	614.9	74.9

*The discount rate is 20%.

An apparent discrepancy in the results for the 200 field is that a 24.7% IRR is recorded under both systems but the NPV is actually slightly lower under the UK regime. The reason for this difference is complicated: in the first place for the small field government royalties form a larger proportion of total state 'take' than for the larger fields. As the Norwegian system incorporates a sliding scale of royalties¹⁶ based on production rates this produces a lower total royalty revenue at \$178m against \$239m for the UK model. In addition corporation tax totals over \$500m for the UK against under \$400m for the Norwegian model, highlighting the substantially lower effective rate of corporation tax in Norway, perhaps as low as 33% when the maximum dividend deduction is available. The fact that the same internal rate of return is achieved is explained by the more generous timing of capital allowances in the UK system deferring the (larger) tax burden further into the future than for the Norwegian model.¹⁷

5 Sensitivity analyses: tax rate

We can now consider the scope for fiscal management under alternative situations. For example, in the UK if world oil prices were to fall how would the automatic safeguards in the Oil Taxation Act perform? Conversely, how would such provisions operate in a situation of long term rising prices? Before examining the sensitivity of project profitability to such changes, however, we shall review the relative importance of such safeguards in relation to simple manipulation of the tax rate: a matter which is apparently to be an annual decision by the Norwegian Storting but one in which the UK government stated that its policy would be 'to avoid frequent changes of the rate but be prepared to review the rate of tax if substantial changes were to occur.'¹⁸

¹⁶The UK 'effective' rates we used based on the tax reference price were as follows: 200:11.6%, 300:11.8%, 500:12.0%, 700:12.2%. The Norwegian rate depends on the production volume and the period in which the licence was issued. Some older licences have a fixed rate of 10%. The details of the sliding scale are as follows:

Average daily production	Royalty percentage
under 40,000 bbls	8
40,000 and under 100,000 bbls	10
100,000 and under 225,000 bbls	12
225,000 and under 350,000 bbls	14
350,000 and over	16

We have taken these rates as being effective on the tax reference price which therefore understates the advantages of the Norwegian system for the small fields.

¹⁷Under our assumptions the UK system enables 50% of the 200 field's total net cash flow to be achieved within seven years of commencement by which time under 30% would be reached under the Norwegian system.

¹⁸Official Report, 27 November 1974, c. 473.

Figure 1 contrasts the effects of changing the tax rate under the two systems for three hypothetical fields. The diagram shows quite clearly that for a given price level (\$12.50/bbl) the prospects for increasing government revenue by raising the rate of PRT are limited in the UK. This is because of the 'safeguard' clause in the Act, which was described earlier. However, increases in the Special Tax rate will readily provide additional revenue because it is closer to a tax on 'excess' profits than is PRT. The two systems give about the same government take for each field if PRT is raised to around 50% and Special Tax to about 30%. Similarly, it is clear that for any given reduction in the rate of tax the impact on project NPV is much less in the UK than in Norway. For example a 10% lowering of the special tax rate from 25% to 22.5% produces a 7.0% improvement in the NPV of the 300 million barrel field against a 1.2% improvement under the UK system with PRT reduced by 10% (from 45% to 40.5%). And it is the smaller finds which exhibit the smallest relative improvement. In other words, project returns and government revenues are much less sensitive to variations in the (UK) PRT than to variations in the (Norwegian) Special Tax. This point is made particularly clear in Figure 2 which provides a separate statement of the relationship between the tax rate and the takes from PRT and Special Tax. It shows that the amendments to the Oil Taxation Act provided important relative assistance to high unit cost fields at current rates. But it also underlines the point that the safeguard provisions place an effective ceiling on PRT take were the rate simply to be raised.

6 Sensitivity analyses: price

We now supplement the sensitivity analyses on tax rate changes at a fixed price in Figure 2, with similar schedules over a wide range of prices but at a fixed tax rate (Figure 3). All tax rates are assumed to remain as they are now (including Special Tax at 25% and PRT at 45%).

The general effect is for UK project returns for the larger fields (500 and 700) to be marginally lower than the Norwegian equivalent and government take marginally higher. The position for the small fields is again complicated by the compensating relationship between corporation tax and petroleum revenue tax and the higher effective UK royalty rates. Above about \$10/bbl the 300 field does yield slightly higher returns under the UK system but this is only the case for the 200 field above \$14/bbl. A separate statement of the relationship between Special Tax or PRT take and price is given in Figure 4. Here we see that for

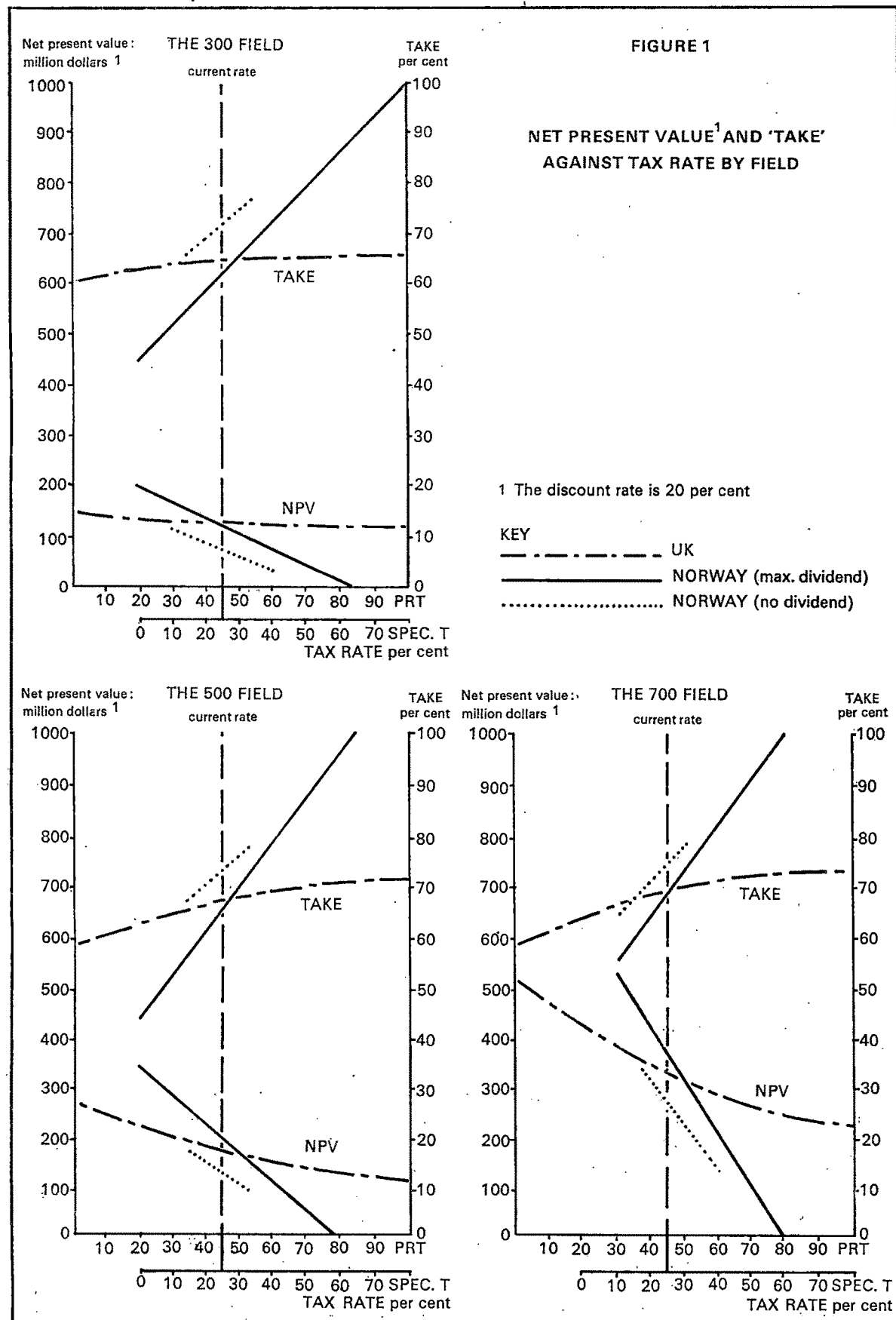
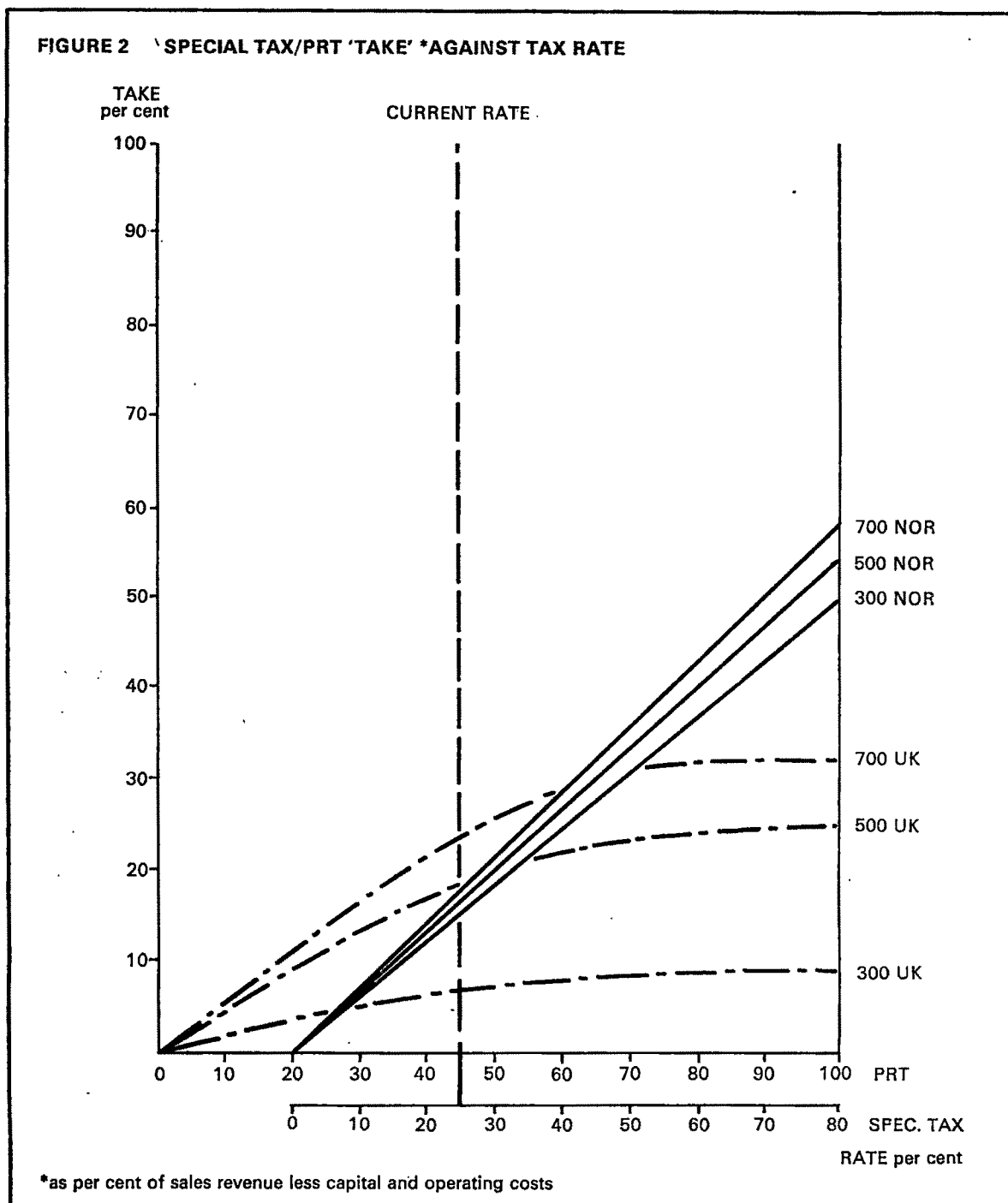


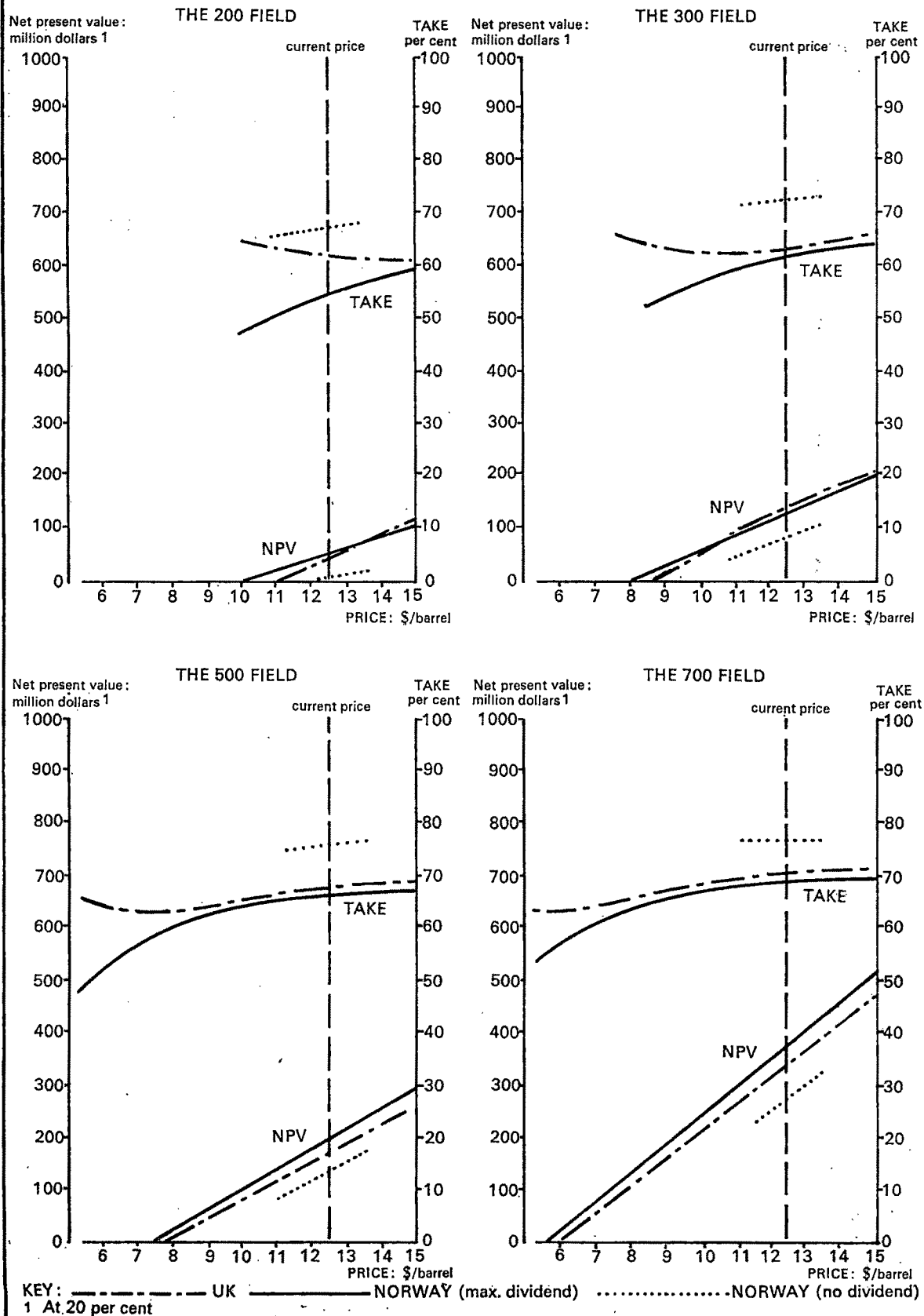
FIGURE 2 'SPECIAL TAX/PRT 'TAKE' *AGAINST TAX RATE

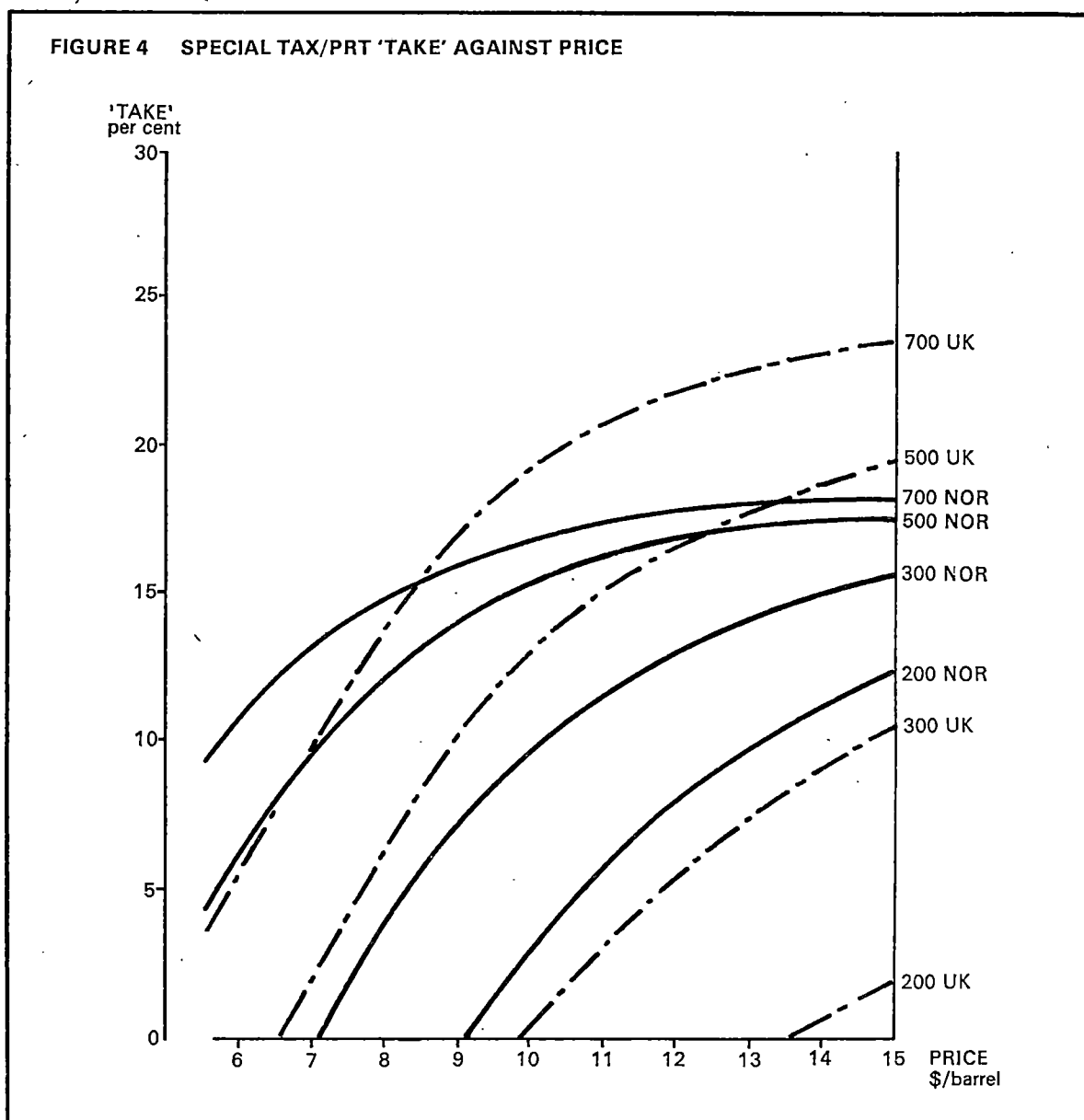


the new taxes the general rule is lower takes for the small fields and higher ones for the large projects under the UK system as compared with the Norwegian. However, the UK safeguards exempt each field from PRT liability at a higher price than exemption from special tax payment. (That is, the Special Tax curve cuts the horizontal axis to the left of the point where the PRT curve intersects.)

The substantial differences in Figure 4 are at first sight difficult to reconcile with the close correspon-

dence between overall government takes in the two countries which Figure 3 shows over a wide range of prices. The main reason for this apparent paradox is that in the UK PRT is treated as an expense in the calculation of corporation tax liability whereas the Norwegian special tax is purely an additional charge (after taking into account the special allowance). The explanation for the rather surprising trend shown in Figure 3 under the UK system at low prices is as follows. In the UK, PRT ceases to be payable at

FIGURE 3 NET PRESENT VALUE¹ AND 'TAKE' AGAINST PRICE BY FIELD



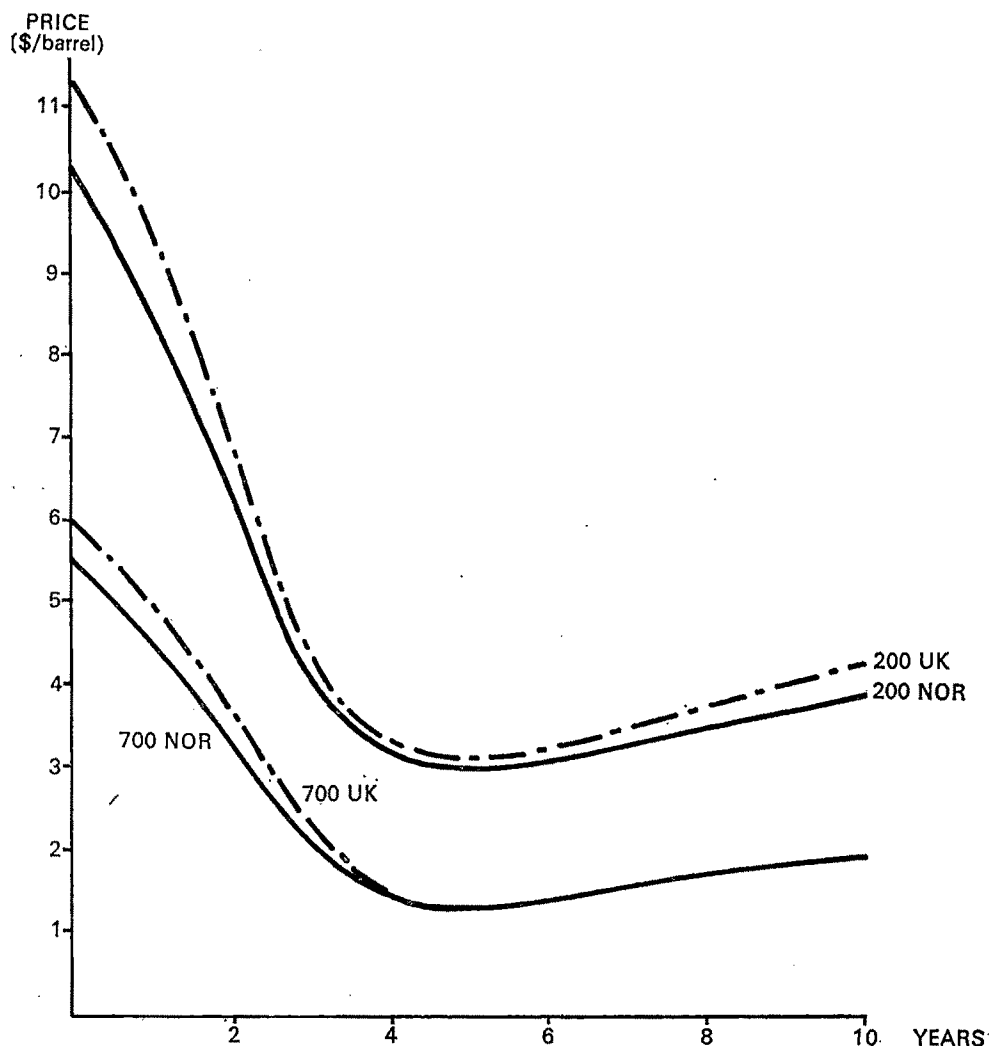
higher prices than for Special Tax but of course corporation tax and royalties continue to be levied. It will be recalled that the allowances against PRT are rather more generous than those available against corporation tax and, as just noted, the former is a deductible item in calculating the latter. Therefore as PRT liability gradually decreases we have a 'shadow' effect such that the average overall tax rate increases.

But at such low prices royalties (levied on the well head value and not on profits) assume an even more significant role as raisers of government revenue. So under the fixed rate in the UK system the government take, conventionally expressed in profits and not gross revenues, increases dramatically. Here the Norwegian system is nominally more flexible

with a sliding scale of royalty rates related to production levels. However, there is provision in the Petroleum and Submarine Pipelines Act for royalty remission at the Minister's discretion which may therefore be used for assistance at such price levels.

Finally, we draw attention to the remarkable stability under both tax systems of overall government take (Figure 3), as compared with the rapid decline in company profits, as prices decline. For example a \$2 decline in price from \$12.50/bbl to \$10.50 for the 700 field produces an average one percentage point reduction in government take under both the Norwegian and British systems whereas the net present values of the projects decline by nearly 30%. The profitability of all the fields is highly sensitive to price movements in both directions despite the

FIGURE 5 THE PRICE AT WHICH THE 200 AND 700 PROJECTS EARN A 20 PER CENT RETURN AGAINST NUMBER OF YEARS INTO PROJECT



differences of detail between the two tax systems; the sensitivity of NPV to price changes is broadly the same under each system.

Because of the heavy 'front end loading' of development costs, this price sensitivity declines considerably once the first few years' capital expenditure has been committed. As Figure 5 suggests, under our present assumptions our model fields are quite capable of earning a 20% DCF rate of return on residual cash flow beyond three years into the development programme even at prices well below the recently canvassed EEC floor price of \$7/barrel.¹⁹

7 Sensitivity analyses: interest bearing debt

At present there is still some caution being exercised by the financial community in the provision of interest bearing funds for UK North Sea development projects. Many institutions have been understandably apprehensive about what form state participation in future and established finds will take, though the first participation agreements have now helped to clarify the issue.

Against this background it is appropriate to examine the differences between the UK and Norwegian oil taxation systems towards projects funded wholly or partially from interest bearing debt funds. As is well known, in this country the ownership of oil in the ground is vested in the Crown by the 1934

¹⁹For an application of the 'cut off' criterion to some actual North Sea projects see 'World Oil Prices and the Profitability of North Sea Oil' (note 10: above).

Petroleum Production Act. Hence the simple production payment system used in the USA and elsewhere will probably not be widely used in the North Sea. With a number of outstanding financing proposals already agreed, it may be that the likely pattern for future loans will be such that ultimate recourse may only be had to the assets of the particular project in question, augmented by some forward selling arrangement of production. Obviously considerable and unfamiliar risks are involved in such exercises for the lending institutions and therefore it may be that a royalty will be charged on all production at a fairly modest rate as additional compensation.²⁰

The characters of development projects in the UK and Norwegian sectors are far from directly comparable, not least under the influence of policy differences. For example the role of the Norwegian Government in raising funds at low interest rates on the international market which may be disbursed to Statoil, the Norwegian State oil company, for provision of its share of field development costs is substantially different from the situation in the UK sector where a large number of heterogeneous consortia are now trying to establish a lending base, frequently for a small share in a 'marginal' prospect. So long as the form of state participation remained unclear in the UK, consolidation of such groups into a more creditworthy position (perhaps through a major oil company 'farming in') was inhibited. Even now there are uncertainties about the precise form of participation which may vary from field to field and company to company. Obviously, therefore, each lending arrangement will be unique and we can do no more than generalise on the effects of the fiscal system.

Figure 6 sets out a comparison between the NPVs of projects and the levels of government take under the UK and Norwegian tax systems (200 and 700 fields only) at various levels of debt finance. The price is fixed at \$12.50/barrel and tax rates are as in 1976. We assume a fairly constrained method of loan financing which is the same in both sectors and can be summarised as follows:

(a) The company's share of development finance

is committed first. Thereafter all development finance consists of loan draw downs.

(b) All loans are to be repaid within six years from the start of production. This is a particularly restrictive assumption since repayment of an individual element of the total loan might otherwise be expected to date from the draw down year.

(c) Up to 75% of net cash flow may be used in any year for repayment.

(d) An overriding royalty of 2.5% of gross revenue is to be levied throughout the period of production.

(e) The interest on all loans outstanding is levied at the rate of 12%. Interest due on pre-production loans is capitalised.

Figure 6 demonstrates that government take is lower under the Norwegian system than under the British system on all interest bearing debt-financed projects and that the disparity tends to increase with higher levels of borrowing. The reason for this important difference is that interest and financing charges are allowable in the calculation of both the Special and Corporation Tax base in Norway whereas such charges are specifically excluded from the calculation of PRT assessable profits. For example at the 80% borrowing level there is, under our assumptions, a 30% difference in NPV and ten percentage points in government take for the 200 field. The differences appear to be particularly marked for the smaller fields at high debt levels since interest and other financing charges make up a greater proportion of total costs than for the larger fields.²¹

Conclusions²²

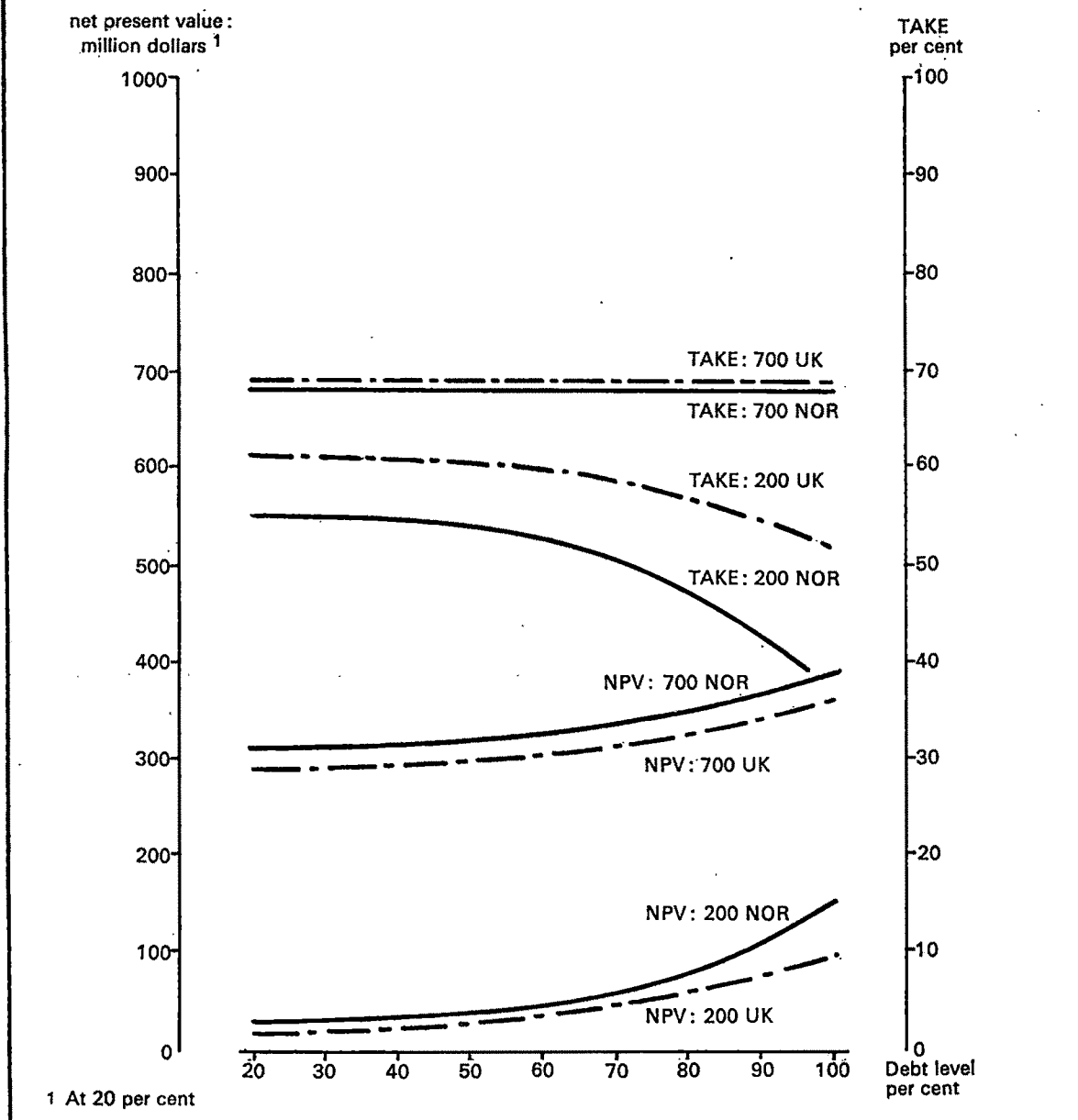
Having conducted a wide range of sensitivity analyses on some of the key variables in determining UK and Norwegian fiscal revenue from North Sea oil operations we come back to the quotation from Mr. Dell's speech mentioned at the beginning of this paper. As to whether the UK take is 'possibly a little higher' than the Norwegian on average, the general conclusion from our hypothetical field analysis is that it may well be so, though one cannot be certain that the two systems will work out this way in practice:

²⁰The pattern described applies broadly to the Forties, Piper, Claymore and Thistle deals announced to date. A novel departure from this trend is the recent LASMO/SCOT deal where subscribers to a fairly conventional unsecured loan stock were given the opportunity to purchase a new type of share: the Oil Production Stock. The revenue from this stock is related to pre-tax income. The issue was oversubscribed and may be followed by other similar offers although the amounts involved, like the LASMO/SCOT issue, will probably not compare with the established methods.

²¹In practice it is probable that the differences between the two systems might be reduced by the operation of the Norwegian Reserve Fund. This is a provision designed to encourage the build up of equity capital as it restrains dividend payments and borrowing until the total equity capital and reserve fund equates to the company's debts. Since we would have to make assumptions concerning the detailed structure of a company's operations we have not made any allowance for Reserve Fund contributions in our calculations.

²²Some of the conclusions of this paper were set out in *The Petroleum Economist*, May 1976, pp. 170-72.

FIGURE 6 NET PRESENT VALUE AND 'TAKE' AGAINST PERCENTAGE DEBT FINANCE



as explained in Section 3 there is some uncertainty about the treatment of dividends in the Norwegian system.

In this paper we do not comment on whether or not the British government's apparent objective of attempting to secure the development of small high cost fields is correct. There is scope for argument about such a policy, as there is about the extent to which tax systems dedicated to collecting 'rent' can be justified. As we have explained, our aim is simply to analyse the effects of the two systems in terms of our hypothetical fields: the most important points

which emerge from this assessment seem to be as follows:

- (1) At present prices and tax rates the two systems will probably yield similar percentage government takes.
- (2) At present prices the UK system seems to lead to a slightly lower tax take from the smaller, higher cost fields than from larger, low cost fields. Thus one of the objectives of the British system seems to have been achieved. However, the Norwegian system is also 'progressive'.
- (3) UK government take is very insensitive to

variations in the rate of PRT, because of the safeguards built into the PRT system: if, for example, the government wanted to increase its revenues it would either have to alter the safeguards or increase the royalty rate, in the absence of an increase in Corporation Tax (which would affect all industry). Similar problems would arise if it wanted to reduce its take – for example, because of falling oil prices or rising costs.

(4) Norwegian government take, by contrast, is readily varied by altering the rate of Special Tax, which is a closer approximation to a tax on 'excess profits' than is PRT.

(5) Under the two systems, profitability is about equally sensitive to price variations.

(6) The above conclusions refer to equity-financed projects. Under a debt-financing régime substantial differences could arise between the results of the two systems because the PRT legislation does not allow interest payments and other financing charges to be offset against profits as they are in the Norwegian system. Consequently the higher the proportion of debt finance and the smaller the field, the lower would government take seem likely to be under the Norwegian system as compared with the British.

Acknowledgements

The authors gratefully acknowledge support for their North Sea research from the Social Science Research Council. They are also happy to acknowledge the benefit they received from discussions on earlier drafts of this paper with oil industry representatives and staff at the Norwegian Ministries of Industry and of Finance and Customs. The conclusions expressed are, of course, entirely the responsibility of the authors.

Walter Taplin Prize

The Association of University Teachers of Accounting and the Council of Departments of Accounting Studies offer an annual prize of £10 for the best article published in *Accounting and Business Research*.

The winner of the prize for Vol. 6 (Nos. 21/24) 1975/76 will be announced shortly. The next prize will be in respect of Vol. 7 (Nos. 25/28) 1976/77.

The prize is named in honour of the journal's founding editor, Walter Taplin.

Costs, Productivity and Efficiency in the Inland Revenue: An Outsider's View

P. N. Dean

In the financial year 1974/75 public expenditure was equivalent to 54 per cent of gross national product: a percentage which has risen and which is likely to continue rising as the century progresses. Despite the massive and growing size of the public sector, it is the private sector's financial results which excite the most informed and sustained comment. The annual report and interim results of a large company are sifted regularly and minutely by financial journalists, bankers, investment analysts and others. By contrast the reports of government departments appear to be little read by taxpayers. Investigation and comment is left to select committees of the House of Commons, and to the Comptroller and Auditor General: tenuous links between government and the governed.

Tax paying has always been a more or less painful experience and as a result nowhere is the gap between administrator and the citizen more evident than in the case of revenue departments. In particular the Inland Revenue has come in for a great deal of abuse, much of it without any apparent objective foundation. The aim of this article is to assess the Inland Revenue's costs, productivity and efficiency using figures from the Department's own reports, supplemented by reference to other government reports.

Inland Revenue costs

Table 1 compares the growth in Inland Revenue costs in the last decade with the growth in its revenues.

Over the ten year period costs have more than trebled and so have net revenues. Costs as a percentage of net revenue were 1.55 per cent in 1965/66, fell to 1.39 per cent in 1969/70 and rose to 1.75 per cent in 1974/75*. Before tackling the significance of

TABLE 1

Inland Revenue costs and net revenues in £m¹

	<i>Total cost of collecting Inland Revenue duties</i>	<i>Net receipt of Inland Revenue duties</i>
	£m	£m
1965/66	72.9	4,692.9
1966/67	78.0	4,997.3
1967/68	85.2	5,742.9
1968/69	94.9	6,546.4
1969/70	103.9	7,491.9
1970/71	119.0	8,180.5
1971/72	144.7	9,110.2
1972/74	158.3	9,248.0
1973/75	181.8	10,634.4
1974/76	249.8	14,235.8

fluctuations in this percentage let us examine the content of Inland Revenue cost figures and the conventions on which they are based.

The cost figure of £249.8 million in 1974/75 appearing in Table 1 is made up as in Table 2.

TABLE 2

Total Inland Revenue costs in £m

	£m
Total charged against Inland Revenue vote	207.7
Less Cost of non-revenue services and of services rendered to other departments	35.6
	172.1
Add Charges met out of the votes of other government departments	77.7
	249.8

*This article went to press before the publication of the 119th Annual Report of the Inland Revenue. As a result it has not been possible to incorporate figures for the financial year 1975/1976.

¹118th Annual Report of the Inland Revenue, Cmnd 6302, HMSO, 1976.

The figure of £207.7 million is found in the Appropriation Accounts² and is substantially made up of salaries or salary-related expenditures. The £35.6 million deduction relates to non-revenue work and to services supplied to other departments. This includes small items such as tithe redemption, war damage compensation and services in connection with the manufacture and sale of stamps but is substantially made up of the cost of services supplied by the Valuation Office to government departments and local authorities. The cost of the Valuation Office in 1974/75 in terms of salaries and general administrative expenses was estimated in the 1974/75 Supply Estimates at £22.3 million.³ Part of this expenditure was on revenue-related work but the major part was not. We do not know the exact attribution of Valuation Office costs between these two categories. As a result at least £13.3 million of the £35.6 million deduction

in Table 2 remains unexplained. Mr. Laurence Clark writing in 1968 was dissatisfied with the basis on which the deductible item is calculated and in particular with the cost figures relating to valuation services supplied outside the Department.⁴ The function of annual reports should be to clarify rather than to obscure and it would therefore seem desirable for the Inland Revenue to dispel any possibly ill-founded doubts by adopting a fuller and clearer presentation of these figures along the lines of Table 3.

Turning back to Table 2 we see a figure of £77.7 million, the cost of services supplied out of the votes of other government departments. In previous years we would have been able to find at least some explanation of this figure by referring to the Supply Estimates. In 1974/75 due to a regrettable change in the Supply Estimates we are left with no explanation of this figure. We can however show very approxi-

²The Appropriation Accounts 1974/75, House of Commons Paper 79, HMSO, January 1976.

³The Supply Estimates 1974/75, House of Commons Paper, HMSO, 1974.

⁴Laurence Clark, *Does the Inland Revenue make a true return of its annual cost to the nation?* (Veracity Ventures, 1968).

TABLE 3
Suggested format for presentation of Inland Revenue costs

Cost of Valuation Office

Cost of services rendered outside the department:
to other government departments
to local authorities

(sub total) (A)

Cost of services to Inland Revenue

Total cost of Valuation Office (Note 1)

Cost of services of Inland Revenue rendered outside the department

Valuation Office (as above) (A)
Tithe redemption
War damage compensation
Stamping services
Other

Total (B)

Cost of services rendered in respect of the department's revenue functions

Met on Inland Revenue vote
Met on the votes of other government departments (Note 2)

(sub total) (B)

Less Services rendered outside the department (as above)

Total (Note 3)

Note 1 The cost of services supplied by the Valuation Office has been attributed to different users on the following basis.....

Note 2 Cost met on the votes of other government departments were made up as follows.....

Note 3 The accounting conventions on which these accounts are based are as follows.....
In particular we wish to draw the reader's attention to the following points relevant to an interpretation of these figures.....

TABLE 4

Additional expenditure in connection with the service 1973/74

	£m
Maintenance, furniture, fuel, light, etc. (Class VI, 5 and 6) *	8.9
Rental values (Class VI, 7)	10.0
Rates (Class X, 17)	4.4
Stationery and printing (Class X, 18)	0.5
Superannuation (Class X, 22)	12.7
Central Computer Agency (Class X, 23)	0.6
Miscellaneous	0.3
	<hr/> 37.4 <hr/>

*Class VI votes 5 and 6 do not include any expenditure on maintenance, furniture, fuel and light. This may be a typographical error, in which case the correct reference would be to Class VI.

ately how it might have been made up in 1973/74. The comparable figure in 1973/74 was £52.1 million. The Supply Estimates for that year contained the note set out in Table 4.

Clearly these figures have been revised upwards to £52.1 million just as the Inland Revenue's original vote of supply was increased by supplementary votes during the financial year. Nowhere is there any explanation of how the increase is made up.⁵ From the Appropriation Accounts we see that expenditure under Class VI Vote 7 (Civil Accommodation Services) was actually 12.5 per cent down on the original supply estimate figure in 1973/74. There was a small increase in the Government's rate bill (Class X Vote 17). The only sizeable increase occurred in superannuation which showed an 11 per cent increase on the original estimates (net of appropriations in aid). Thus movements in actual over budgeted expenditure of government departments providing services for the Inland Revenue do not explain how £37.4 million detailed in the 1973/74 Supply Estimates could have grown to £52.1 million (twice the cost of these services in the previous year). In view of the changed form and content of the Supply Estimates it would seem desirable for the Inland Revenue to give a full explanation of costs met on the votes of other departments in its own Annual Reports.

A further difficulty arises over the costing of Inland Revenue accommodation. All government occupied property whether owned by the Crown, leased from local authorities or leased from private

sector landlords is administered by the Property Services Agency, a part of the Department of the Environment, and is covered by an allied services charge. Expenditure for accommodation is met by the Department of the Environment and charged to its vote. This department then attributes estimated charges for the use of property to the various government departments. These charges are based on the square foot area of accommodation used by each department and vary depending on whether the property is situated in Inner London, Outer London or the provinces. In arriving at the amount per square foot for Inner London, for instance, the total square footage occupied by Central Government in that area would be charged at a rate corresponding to the average rent paid per square foot for leased accommodation in that area. There would therefore be a rent charge for Crown-owned properties such as Somerset House. The allied services charge per square foot per annum for the purposes of the 1973/74 Estimates was as follows:

*Allied Service Charge
in £ per sq. ft. p.a.*

Inner London	1.908
Outer London	1.087
Provinces	0.633

We can compare these notional rentals with figures published by the Location of Offices Bureau for new commercial lets in Autumn 1972.

Rent per sq. ft. p.a.

	£
Central London	6.32
Outer London	2.39
Provinces	0.75 - 3.50
	(depending on region)

The rent charges applied to government departments for costing purposes were therefore well under half current commercial rentals.

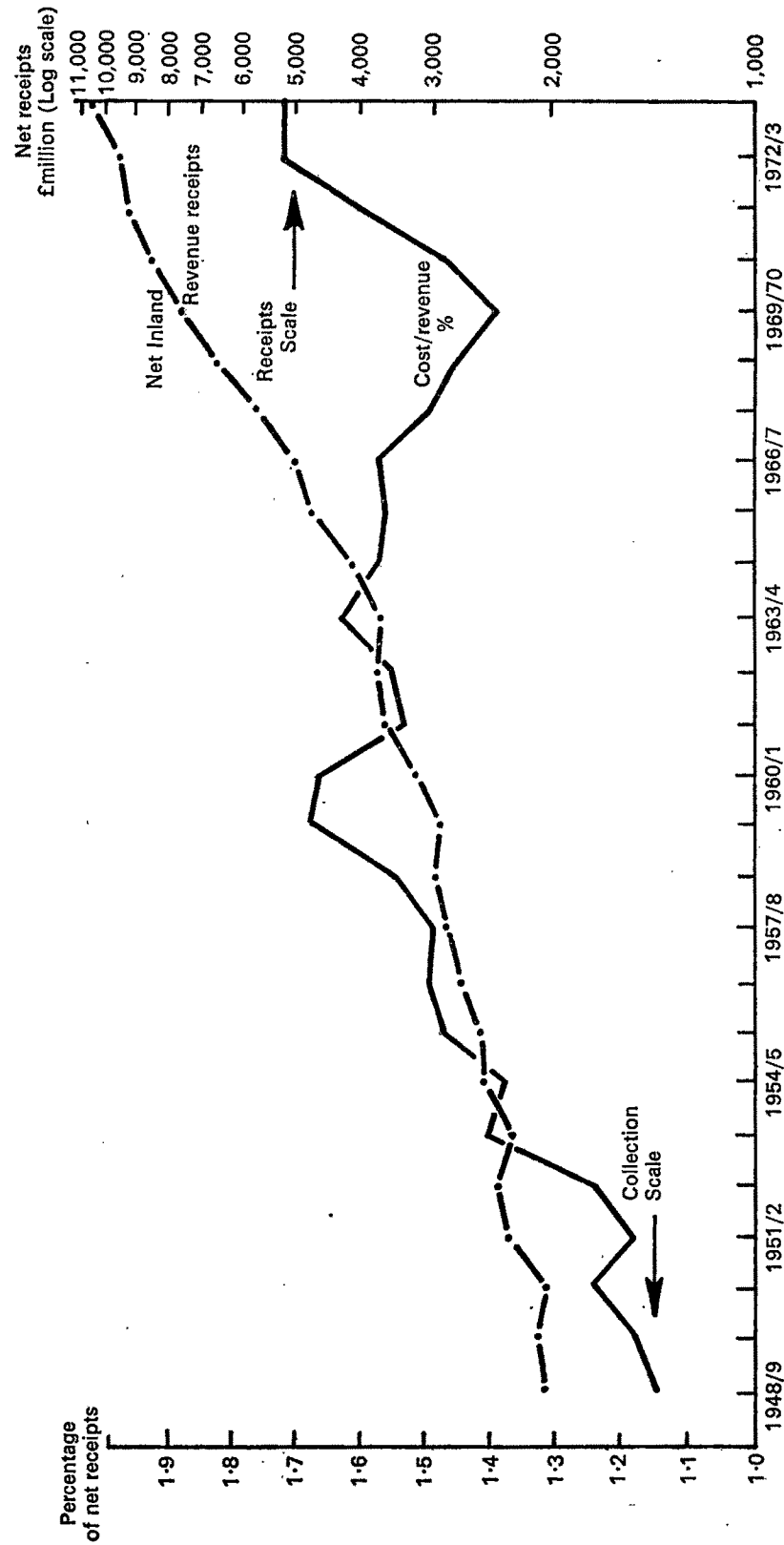
This situation was righted in 1974/75 by the Property Services Agency adopting an opportunity cost concept for costing government accommodation services. This resulted in an increase in accommodation costs for the Inland Revenue from £10 million in 1973/74 to £26 million in 1974/75. While welcoming this change, it would seem desirable in addition for the Inland Revenue to publish a note in its Annual Report detailing the categories and amounts of capital expenditure undertaken each year on its behalf by other government departments.

Inland Revenue productivity

Having considered some deficiencies in the content and format of Inland Revenue cost figures let us now consider the trends of costs and revenues. As

⁵Before 1973/74 one always had the breakdown of this figure in the comparative figures of the succeeding year's Supply Estimates. The present difficulty is due to a change in format of the Supply Estimates.

TABLE 5 NET RECEIPTS AND COST OF COLLECTION
ALL INLAND REVENUE DUTIES



157.05/AC 27

noted above, the Department expresses its administrative costs as a percentage of revenues net of tax repayments. Table 5 is reproduced from page 28 of the 117th Annual Report of the Inland Revenue. Administrative costs as a percentage of net receipts are shown on the left-hand vertical axis and net receipts on the right-hand vertical (log scale). The cost/revenue percentage is shown by the continuous black line; net receipts by the broken line. Falls in the cost/revenue percentage coincide with periods during which receipts were increasing most rapidly (1950/51, 1960/61, 1965/66 and 1967/69). Conversely rises in the percentage coincide with periods when receipts were either falling or advancing at an abnormally slow rate (1953/54, 1958/59, 1962/63 and 1970/72). Over the whole period the percentage has risen from 1.56 per cent in 1964/65 to 1.71 per cent in 1972/73.

To what extent does a rise in this percentage indicate a deterioration in Inland Revenue productivity? The answer is: hardly at all. This percentage only indicates productivity in the very broadest sense, affording some indication over time of the historical relationship between costs and net receipts. Net receipts are determined to a large extent by factors outside the control of the tax authorities: real growth in taxpayers' incomes, changes in the price level, changes in tax rates and allowances and the tendency of a progressive income tax system to produce fiscal

dividends.⁶ If the cost/revenue percentage is of such limited use as an indicator of changes in Departmental productivity is there any alternative productivity indicator?

Productivity measurement appears to offer a practical alternative. This technique, developed in the last century to measure returns to the factors of production, particularly those resulting from the substitution of machinery for manpower, has more recently been applied to public sector programmes.⁷ Organisations employ inputs in the form of factors of production and produce outputs of goods or services. In the public sector outputs frequently take the form of services supplied free to the user. Productivity measurement compares physical measures of input and output. Indices of physical input (e.g. man years, square foot of accommodation) are compared with indices of physical output (e.g. number of cases dealt with). We now attempt a rough application of this technique to the Inland Revenue.

Labour is by far the most important Inland Revenue input. Figures for the number of staff employed by the Department are given in the Annual Reports. With recent changes in the format of the Supply Estimates, it is not possible to know the numbers of staff employed in the various Inland Revenue departments. We do however have a series of total man years (see Table 6).

On the output side the choice is limited by the data. Output could be represented by numbers of

⁶In a progressive tax system income tax receipts are likely to rise faster than incomes themselves as rising money incomes push tax-payers into higher marginal rate bands.

⁷See for instance *Measuring Productivity of Federal Government Organisations* (US Bureau of the Budget, 1964).

TABLE 6

	(A) Inland Revenue staff in 000	(B) As in (A) but excluding Valuation Office in 000	(B) As an index on the base 1959-60 = 100
1959/60	55.7	46.6	100
1960/61	58.2	47.9	103
1961/62	57.3	49.1	105
1962/63	58.3	50.2	108
1963/64	58.0	50.6	109
1964/65	57.7	51.1	110
1965/66	59.5	50.3	108
1966/67	62.7	51.5	111
1967/68	65.7	53.4	115
1968/69	65.5	55.3	119
1969/70	69.3	57.1	123
1970/71	71.8	58.8	126
1971/72	76.8	67.4 *	145
1972/73	75.7	66.2 *	142
1973/74	75.0	65.5 *	141

*These figures have been deduced from figures in the Supply Estimates of numbers of staff employed in the Valuation Office.

TABLE 7
Numbers of Inland Revenue assessments in 000

	<i>Schedule D</i>	<i>Capital Gains Tax</i>	<i>Corporation Tax</i>	<i>Surtax</i>
1959/60	3,315			379
1960/61	3,334			413
1961/62	3,399			249
1962/63	3,381			262
1963/64	3,310			269
1964/65	3,406			295
1965/66	3,380			337
1966/67	3,219			328
1967/68	3,000	116	346	431
1968/69	3,200	197	381	483
1969/70	3,350	291	395	553
1970/71	3,492	275	393	429
1971/72	3,683	257	403	451
1972/73	3,739	356	409	383
1973/74	3,695	392	417	374

assessments. The Inland Revenue publishes series of assessments for Schedule D, capital gains tax, corporation tax and surtax (Table 7).

In fact there were assessments for both capital gains tax and corporation tax before 1967/68 but the published figures do not form a continuous series before this date. As a result the series for these two taxes start rather abruptly.

There are omissions from this table, the most significant of which in terms of revenue are income tax other than Schedule D, estate duty and stamp duties. The Inland Revenue publishes information concerning PAYE and estate duty as in Table 8.

There are several difficulties in welding these series into a single indicator of Inland Revenue output. First, there are still omissions. There are no indicators for stamp duties, non-revenue services and some smaller taxes and programmes. Second, there is the problem of how to treat the PAYE system in relation to other assessed taxes, especially as an unknown number of PAYE earners are also assessed under Schedule D. Third, there is the question of how these series should be weighted in view of the appearance of two new taxes, corporation tax and capital gains tax.

Without access to unpublished information these difficulties cannot be entirely overcome and consequently only a rough calculation can be made. For the purposes of such a calculation we can ignore the programmes and taxes for which we have no output indicators. These are anyway quite small in terms of resource use. The problem of how to treat Schedule D and PAYE is more important and seems best overcome by taking one indicator for Schedule D (assessments) and another for PAYE (estimated numbers in the PAYE scheme). The disadvantage here is that only a minority of those under PAYE are assessed to tax. The output of the PAYE scheme is therefore qualitatively different from other outputs; this nevertheless seems to be the only course. An additional difficulty is caused by the abrupt start in 1967/68 of the series relating to capital gains tax and corporation tax. To express the output series in Tables 7 and 8 as a single output index they are first expressed as separate indices on the base 1959/60 = 100 (except for the two newer taxes which are on the base 1967/68 = 100). These indices are then aggregated using the final year weights in Tables 9 and 10.

TABLE 8
PAYE and Estate Duty: numbers in the system

	<i>Estimated numbers in PAYE scheme (millions)</i>	<i>Estimated numbers of estate duty cases in 000*</i>
1959/60	22.10	72
1960/61	22.85	76
1961/62	23.20	83
1962/63	23.25	69
1963/64	23.30	60
1964/65	23.55	62
1965/66	24.10	66
1966/67	24.10	71
1967/68	24.15	75
1968/69	25.00	81
1969/70	25.03	40
1970/71	24.88	42
1971/72	24.65	38
1972/73	24.82	35†
1973/74	25.33	38†

*Number of estates above the exemption limit on which duty was paid for the first time in the year.

†Estimated numbers on the basis of the number of estates actually reviewed in these years.

We need to note discontinuities in the surtax and estate duty series due to changes in exemption limits and the abrupt change in 1967/68 with the beginning of the series for corporation tax and capital gains tax. As already noted these two taxes were introduced slightly earlier than this but a complete series for assessments is not available. While the introduction of these taxes was certainly accompanied by a very real increase in Inland Revenue outputs, the effect of inadequate information and final year weighting is to exaggerate the increase in output between 1966/67 and 1967/68.

TABLE 9

<i>Tax</i>	<i>Net receipts 1973/74 £m</i>	<i>Weighting</i>
Surtax	307.4	3.0
Capital Gains Tax	323.6	3.0
Corporation Tax	2,239.7	21.5
Estate Duty	412.2	4.0
Schedule D PAYE	7,136.6	20.5 48.0
	<hr/> 10,419.5	<hr/> 100.0%

TABLE 10

	<i>Schedule D</i>	<i>Capital Gains Tax</i>	<i>Corporation Tax</i>	<i>Surtax</i>	<i>PAYE</i>	<i>Estate Duty</i>
1959/60	100			100	100	100
1960/61	101			109	103	106
1961/62	103			66	105	115
1962/63	102			69	105	96
1963/64	100			71	105	83
1965/65	103			78	107	86
1965/66	102			89	109	92
1966/67	97			87	109	99
1967/68	90	100	100	114	109	104
1968/69	96	170	110	127	113	113
1969/70	101	251	114	146	113	55
1970/71	105	237	114	113	113	58
1971/72	111	222	117	119	112	53
1972/73	113	307	118	101	112	49
1973/74	111	338	120	99	115	53
Weights	20.5	3.0	21.5	3.0	48.0	4.0

Combining the series in the last table gives us a weighted index of physical output for the taxes covered as in Table 11.

This index is a summation of the individual indices in the following form:

$$100 \times \frac{\text{Assessments to tax A in year 19xx}}{\text{Assessments to tax A in year 1959/60}} \times \frac{\text{Yield of tax A in 1973/74}}{\text{Total yield of all taxes in 1973/74}}$$

Because of the weights used, the same change in the output index would result from an extra

- 250,000 PAYE cases
- 86,000 Schedule D assessments
- 63,000 Capital gains tax assessments
- 60,000 Surtax assessments
- 9,000 Corporation tax assessments
- 5,000 Estate duty cases

which means that those taxes which raise more per assessment are proportionately more important as a result of weighting. (Without weighting, a further

250,000 PAYE cases would be matched by a further 3,800 estate duty cases, 370,000 Schedule D cases, 39,000 capital gains tax assessments etc.)

TABLE 11

Index of physical output of Inland Revenue for major taxes

1959/60	100
1960/61	103
1961/62	104
1962/63	103
1963/64	101
1964/65	104
1965/66	106
1966/67	105
1967/68	137
1968/69	148
1969/70	152
1970/71	151
1971/72	152
1973/73	156
1974/74	159

TABLE 12
Index of output of collections of Inland Revenue in real terms

	<i>Total net receipt Inland Revenue duties £m</i>	<i>Adjusted retail price index 1962 = 100</i>	<i>Net receipt in real terms on the base 1959/60 = 100</i>
1959/60	2,984	95.7	100
1960/61	3,209	96.7	106
1961/62	3,636	100.0	117
1962/63	3,753	103.6	116
1963/64	3,719	107.0	111
1964/65	4,072	112.1	116
1965/66	4,693	116.5	129
1966/67	4,997	119.4	134
1967/68	5,743	125.0	147
1968/69	6,546	131.8	159
1969/70	7,492	140.2	171
1970/71	8,181	153.4	171
1971/72	9,110	164.3	178
1973/74	9,248	179.4	165
1974/75	10,649	208.2	164

Alternatively we can define output as a flow of collections of tax. Ideally we would wish to adjust collections for changes in allowances, exemptions and rates of tax but published information does not allow this. We can however express net revenue collected in real terms (Table 12).

The final column in Table 12 therefore represents an alternative measure of total output. We can now divide each measure of output by a single measure of input, the index of man years of staff employed (see Table 5). This gives productivity indices as in Table 13.

TABLE 13
Productivity indices for the Inland Revenue

	<i>On the basis of an assessments definition of output</i>	<i>On the basis of a collections definition of output</i>
1959/60	100	100
1960/61	100	103
1961/62	99	111
1962/63	95	107
1963/64	93	102
1964/65	95	114
1965/66	98	119
1966/67	95	121
1967/68	119	128
1968/69	124	134
1969/70	124	139
1970/71	120	136
1971/72	105	123
1972/73	110	116
1973/74	113	116

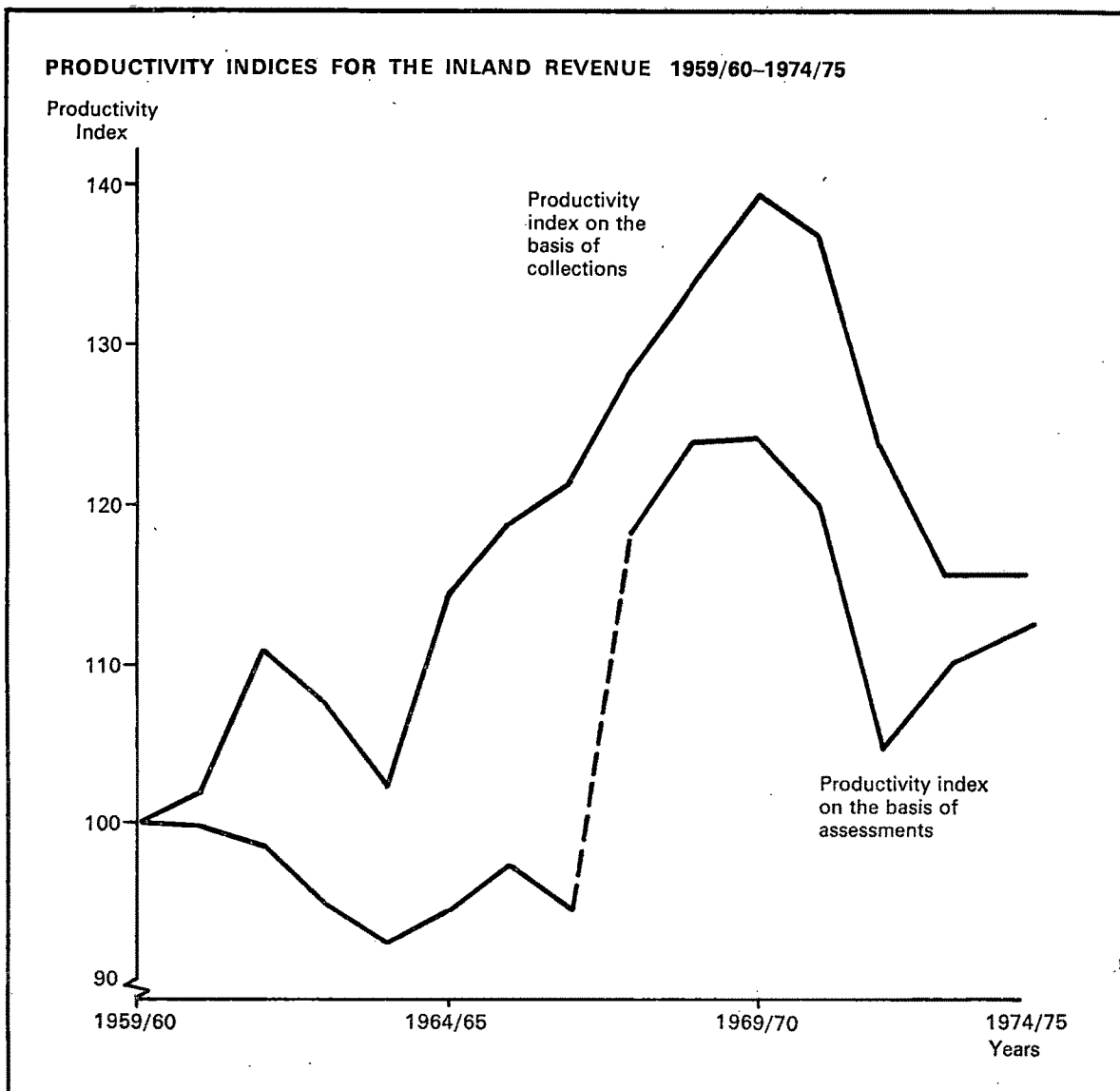
We can show these indices in graph form as in the diagram on page 25.

Comparing these two indices, we note first that the index using an assessments definition has one major discontinuity. We notice too that the growth of productivity over the whole period is apparently very similar in magnitude (13-16%) whichever method is used. This finding is illusory bearing in mind the major discontinuity referred to above. We can therefore say little about the rate of productivity growth over the whole period. The graphs do however show broad agreement on the direction of productivity changes:

- a decline in the two years preceding 1963/64;
- an increase in the subsequent two years followed by
- a further increase to a peak in 1969/70;
- a decline in the subsequent two years.

If we concentrate on the years from 1967/68 onwards for which we have two continuous series the movements are similar both in direction and magnitude, representing an overall decline in productivity of 5% using the assessments basis and 9% using the collections basis. There is a resemblance too between these figures and those published by the Inland Revenue relating administration costs to net receipts of tax (see Table 4 above).

The latter figures would seem to indicate a slight fall in productivity over the whole period. (Administration costs as a percentage of net receipts were slightly higher in 1973/74 than they were in 1959/60.) The Inland Revenue figures do however confirm the growth of productivity between the mid sixties and 1969/70 (administrative costs fell from 1.6% to 1.4% of net revenue) and the decrease in productivity thereafter (administrative costs rose from 1.4% to 1.7% of net revenue in 1973/74). The official figures therefore appear to show the direction of productivity change without revealing its extent. A growth in



productivity of the order of 16% (as revealed by the productivity index based on collections) over the 14 year period would seem well within the bounds of reason given that the Department is highly labour intensive but has recently adopted automated methods to some of the simpler tax administration procedures. The abrupt fall in productivity in the early seventies simply reflects the application of a greater input of labour which has not been required by a sufficiently rapid expansion of outputs. Against the background of the history of the Inland Revenue over this period one would argue that much of the productivity growth attained by the Department between 1965 and 1969/70 was at the expense of efficiency. The greater burdens in terms of new and more complex taxes accepted by a staff which suffered from inadequate recruitment over this period resulted in an apparent increase in

output. This apparent increase concealed a widespread deterioration in standards of accuracy, speed and service in the fields of assessment, anti-evasion activities and collection of tax arrears. (For a discussion of these factors see the concluding section of this article.) Only after 1969/70 was it possible to recruit staff and deploy existing staff in such a way as to restore these standards to something near their previous norm.

Inland Revenue efficiency

So far we have dealt with productivity – the relationship between factor inputs and outputs in physical terms. An increase in productivity is not equivalent to an increase in efficiency, unless the quality of output is either maintained or increased. We therefore need to consider the broader topic of efficiency.

TABLE 14

	<i>Net receipts £m</i>	<i>Cost of administration £m</i>	<i>Administrative cost as % of net receipts</i>
Total Inland Revenue	10,649	181.8	1.71
Income Tax	7,137	175.5	1.75
Surtax	308		
Corporation Tax	2,262		
Capital Gains Tax	324		
	10,031		
Estate Duty	412	4.3	1.04
Stamp Duties	190	2.0	1.03

TABLE 15

	<i>Net receipts £m</i>	<i>Assessments made in 000</i>	<i>Estimated number of tax payers in 000 1971-72</i>
1973/74			
Income Tax	7,136.6	—	19,680
Surtax	307.4	374	350
Corporation Tax	2,239.7	417	452
Capital Gains Tax	323.6	392	460
Estate Duty	412.2	—	38

Let us first look at the administrative costs of the various taxes.

As previously stated the cost of raising Inland Revenue duties is estimated by the Department at £181.8 million for 1973/74 or 1.71% of net receipts of £10,649 million. These figures are made up as in Table 14.

The Department calculates the 'marginal' cost of administering capital gains tax separately at £4.8 million or 1.48% of net revenue in the same year. This figure is said to be marginal because no allowance is made for the fact that part of the cost of administering the capital gains tax is shared with other taxes. In the previous year the Department also published a figure for the marginal cost of administering surtax of £5.3 million or 1.56% of net revenue of £341 million. On the basis of the same relationship between cost and revenue, the marginal cost of administering surtax in 1973/74 would have been £4.8 million. It is unlikely that the shared element of cost between these and other taxes is more than 25% of direct cost. In rough terms therefore the total administrative costs of these taxes would have been about £6 million each in 1973/74 giving a cost to revenue percentage of 1.85%. This would leave the cost of administering corporation tax and income tax at about £163.5 million or 1.73% of net receipts.

We have seen that the percentage of administrative cost to net revenue is not a good indicator of changes in administrative efficiency because its movements

tend to reflect changes in receipts which are quite independent of departmental efforts. The capital gains tax, for instance, cost £4.8 million to administer in 1972/73 and the same in 1973/74 but because receipts increased from £209 million to £324 million this percentage went down from 2.32% to 1.48%. This percentage nevertheless has an important part to play in the evaluation of tax administration because of the regressiveness of tax operating costs. Certain basic costs do not vary with the amount of tax demanded. This means that the smaller the tax collected from a particular source, the greater will be the tendency for the tax collected to disappear in tax operating costs. Thus if administrative costs take a very high percentage of net receipts, tax-raising becomes a wasteful exercise. In evaluating the Inland Revenue's efficiency we therefore need to consider the size of assessments raised (see Table 15). This gives averages as in Table 16.

TABLE 16

	<i>Average size of assessment £</i>	<i>Average amount paid per taxpayer £</i>
Income Tax	—	363
Surtax	822	878
Corporation Tax	5,370	4,955
Capital Gains Tax	825	725
Estate Duty	—	10,953

Before discussing the figures we need to note:

a. The assessments made in a particular year do not determine the amount of net receipts in that year which has already been determined by assessments made in previous years. The averages based on estimated numbers of tax payers show that the discrepancies arising on this account are not large (except for capital gains tax).

b. The Inland Revenue does not publish comprehensive figures for the number of income tax assessments made. We know that 3.7 million Schedule D assessments were made in 1973/74 but we have no current figures for Schedule E assessments. In 1965 four million were assessed under Schedule E out of 23 million then coming within the scope of PAYE.⁸

On this basis, there could be currently well over eight million formal assessments to income tax. It seems pointless however to guess the actual number on such slender evidence. We are therefore restricted to the average amount collected based on the estimated number of tax payers subject to income tax.

c. The estimated number of estate duty tax payers is very much smaller than the number of estate duty cases reviewed by the Department, most of which are exempt from tax.

Whatever the gaps in the information, we can be sure that, on average, income tax assessments are the smallest, followed by capital gains tax and surtax,

and finally by corporation tax and estate duty which are the largest. The average size of assessment seems to be related to cost/revenue percentages (Table 17).

We would expect the cost/revenue percentage for corporation tax to be low because the average revenue collected per tax payer is large. We would on the other hand expect the cost/revenue percentage for income tax to be high because the average amount collected per source is small. The high cost of collecting income tax relative to the revenue collected explains the failure of the Inland Revenue to make formal assessments on the majority of income tax payers, relying for the most part on the accuracy of the PAYE system for the bulk of those taxed under Schedule E (employees). The PAYE scheme has the advantage of enabling a large number of small amounts of tax to be collected from a relatively small number of sources (Table 18).

Schemes in column one of Table 18 correspond with the number of employers operating PAYE schemes. A high cost to revenue percentage for income tax is also consistent with current studies of the possibility of making income tax a self-assessed tax, which would economise on administrative costs at the expense of compliance costs.

Without firm information we can only guess at the costs of administering the various taxes (Table 19).

If our assumptions are correct the cost of collecting income tax was just under 2 per cent of net revenue collected in 1973/74.

Since the above was written questions asked in the House of Commons have elicited answers which broadly confirm the argument appearing here. In a

⁸Alexander Johnston, *The Inland Revenue* (Allen and Unwin, New Whitehall Series, 1965).

TABLE 17

<i>Average size of assessment</i>		<i>Administrative cost as % of net receipt</i>	
Small	:	Income Tax	Unknown
Medium	:	Capital Gains Tax and Surtax	1.85 Estimated on the basis of 'marginal' percentage of 1.48
Large	:	Estate Duty	1.04
		Corporation Tax	Unknown

TABLE 18

	<i>No. of PAYE schemes in 000</i>	<i>Amount collected via PAYE £m</i>	<i>Amount collected £ per scheme</i>
1967/68	941	2,276	2,950
1968/69	918	3,232	3,521
1969/70	882	3,727	4,226
1970/71	842	4,467	5,305
1971/72	830	4,816	5,802

TABLE 19

	£m (1973/74)
Total cost of raising Inland Revenue Duties	181.8
Estate Duty	4.3
Stamp Duties	2.0
	6.3
	175.5*
Capital Gains Tax	6.0
Surtax	6.0
	12.0†
	163.5
Corporation Tax (on the basis of 1% of Net Revenue of £2,239.7m)	22.4
Income Tax	141.1

*Source: 117th Annual Report of Inland Revenue.

†On the basis of figures in the 117th Annual Report of Inland Revenue as discussed above.

written reply on 3 December 1975 to a question concerning tax administration costs from Mr. Dafydd Wigley, Mr. Robert Sheldon, on behalf of the Chancellor of the Exchequer, gave the following figures:

	Estimated total cost of administration	Estimated net receipt
	1974/75	1975/76
	£m	£m
Income tax	220	14,008
Corporation tax	7	2,125
Capital gains tax	6	325
Value added tax	70	3,275

The administrative cost/net revenue percentages on the basis of these figures are as follows:

Income tax	1.57%
Corporation tax	0.33%
Capital gains tax	1.85%
Value added tax	2.14%

The cost figures quoted above relate to 1974/75 while the revenue figures relate to 1975/76. Making a notional adjustment for this alters the picture very little. The only marked disparity between these figures and our informed guesses is the cost of administering corporation tax which at 0.33% of net revenue must be the cheapest tax of all time (N.B. An international comparison shows cost/revenue percentages of less than 1% for taxes which are only collected but not assessed. Few taxes which involve both assessment and collection are administered at less than this percentage. The UK corporation tax appears from these figures to be

five times as cheap as the UK income tax to administer).

The cost of administering PAYE is not known but we do know that about one half of Inland Revenue staff is employed on PAYE.⁹ Because PAYE is a routine matter we would expect the salaries to be less than the average paid throughout the Department. Sandford therefore estimates that 45% of Inland Revenue costs are attributable to PAYE.¹⁰ On this basis, costs of administering PAYE in 1973/74 would have been £81.8 million compared with a possible yield of about £5,000 million, giving a cost/revenue percentage of 1.6. This would imply that the cost of raising the rest of the income tax plus making Schedule E assessments was £59.3 million or about 3% of non-PAYE income tax revenue.

We have spent rather a long time trying to guess the approximate cost/revenue percentage for the various direct taxes. As long ago as 1961 the Estimates Committee wrote: '[we] question whether the Department devotes enough effort to determining the administrative costs of different taxes . . . The absence of any reliable costing figures is to be regretted . . . Your committee therefore recommend that the Board of Inland Revenue should investigate the possibility of a wider application of costing methods to the work of the Department with a view to arriving at reliable figures of the cost of collecting individual taxes'.

According to the 113th Annual Report of the Inland Revenue published in March 1971, 'It is still not possible to make an apportionment of the cost of collecting the taxes on income, profits and capital gains between each of the different taxes because a good deal of this work is carried out for the purpose of more than one tax and an accurate basis for subdividing its cost has not yet been devised'. The Inland Revenue's ostensible reason for failing to do as the Estimates Committee recommended was the difficulty of attributing shared costs between the different taxes. The point needs to be made however that the problem of shared costs is not insuperable. In fact it is solved with varying accuracy by commercial accountants every day. Presently available techniques of costing and work measurement permit the Inland Revenue if it so wishes to make a rough attribution of shared costs. The fact that no cost estimates have yet been published for corporation tax, where the shared cost problem is minimal, seems to indicate that the Inland Revenue has other reasons for dragging its feet.

⁹Proposals for a Tax Credit Scheme, Cmnd 5116, HMSO, 1972.

¹⁰C. T. Sandford, *Hidden Costs of Taxation* (Institute of Fiscal Studies, 1973).

So far the discussion has been framed in terms of average cost/revenue percentages. For the purposes of evaluating efficiency in tax administration it is important to know the size distribution of assessments for each tax. Small assessments at the beginning of the range will in all probability yield no net revenue to the government. Revenue will be completely eaten up by administrative costs, which as we have suggested have a large fixed cost element. Taking into account compliance costs as well would raise further the figure at which a tax assessment will yield any net revenue. Part of the job of administration is therefore to see that very small assessments are kept to a minimum by raising exemption limits year by year. If we examine capital gains tax for the last year for which complete figures are available (y/e 31.3.75)¹¹, we see that 210,006 assessments were made for tax of £141.2 million giving an average amount per assessment of about £700. The size distribution of assessments however shows that the first 128,642

assessments raised only £12.615 million or less than £100 each. Thus the remainder of the assessments (81,364) yielded £129.1 million or on average over £1,500 each. It seems probable therefore that the tax collected by the first 128,642 assessments is not greatly in excess of the tax operating costs incurred in raising this revenue. If for these assessments total administrative costs amounted to £4 million this would give a cost/revenue percentage of around 33 per cent.

Comparable figures are not available for other taxes but we can see from figures published in Inland Revenue Statistics (Tables 12 and 30, 1973/74) that a similar situation exists. In Table 20 (which deals with the taxation of unincorporated business) we show 1970 assessments under Schedule D cases I and II. The comparable figures for corporation tax are given in Table 21.

These figures for capital gains tax, Schedule D cases I and II and corporation tax, vividly illustrate the small liability/high administrative cost problem. We have already argued that there are certain fixed

¹¹Inland Revenue Statistics 1974 (HMSO, 1974).

TABLE 20

Range of profit (lower limit) £	Numbers of assessments in 000	£ of income assessed £m	Average income assessed per assessment £
NIL	449.6	45	100
250	319.4	118	369
500	541.7	398	735
1,000	342.3	409	1,195
1,500	154.1	259	1,681
	1,807.1	1,229	Aver. 680
2,000 and above	300.8	1,438	Aver. 4,780
TOTAL	2,107.9	2,667	Aver. 1,265

TABLE 21

Range of profit (lower limit) £	Numbers of assessments in 000 made up to 31 October 1972 in respect of 1970	Net amount chargeable to tax £m	Average amount of income chargeable to tax £
NIL	196.6	1.1	6
100	25.3	2.6	103
200	18.2	3.7	203
300	11.0	3.2	291
500	24.8	12.8	516
1,000	27.8	31.4	1,129
	303.7	54.8	Aver. 181
2,000 and above	81.0	5,284.1	Aver. 65,232
TOTAL	384.7	5,338.9	Aver. 13,878

costs of assessment: certain unavoidable minimum administrative costs. These costs may be spread thinly in the case of large assessments but may well be very large in relation to small assessments. Thus in 1973 over 60% of capital gains tax assessments raised only £100 each on average. In 1970 over 85% of assessments under Schedule D cases I and II were on incomes averaging £680 and in the same year almost 80% of corporation tax assessments were on incomes averaging £181. We have seen that even the smallest capital gains tax assessments in 1972/73 were productive of net revenue. The first 129,000 raised revenue of £12.2 million at a time when the cost of administering the whole of the capital gains tax was probably less than £6 million. We have also seen that the administrative cost of these assessments was outstandingly high in relation to the revenue produced. This would be equally true of the bulk of Schedule D case I and II and corporation tax assessments. These taxes only appear economical to collect because of the minority of assessments which bring in the bulk of the revenue. This small number of large assessments raises the average amount of tax charged per assessment to an acceptable figure. This in turn produces an acceptably low percentage of administrative cost to net revenue. The failure to cut out numerous small assessments which are disproportionately costly to process casts considerable doubt on the administrative efficiency of the system, particularly in view of the presence of considerable compliance costs. Indeed it is quite possible that a very large number of small assessments produce no revenue whatsoever net of total tax operating costs. We must stress at this point that a satisfactory solution to the high cost/small liability problem lies with legislators. The Inland Revenue's job is merely to administer taxation within a given structure of rates and allowances.

The Annual Reports of the Department contain a number of sets of figures which can be used to indicate changes in efficiency in accomplishing different operations. Table 25 of the 117th Annual Report sets out the numbers of charges raised by the Department on tax liabilities which have subsequently been discovered to be under-assessed to tax. Part of the table is reproduced in Table 22 with total tax raised by the Department in the final column.

Total tax raised by the Department rose from £3,636 in 1961/62 to £10,634 in 1973/74, a 201% increase in money terms. The charge raised for under-assessed taxation fell from almost £19 million to just over £11 million in 1969/70 and since then has risen to just over £16 million. Over the whole period there has therefore been a £3 million fall in this figure in money terms. The year 1961/62 was abnormal in terms of the charge raised for unassessed tax. Even taking the next year as a basis there has been only a 16% increase in this figure as compared with a 200% increase in tax revenues. There are two basic possible explanations for this discrepancy: either undiscovered evasions have risen or evasion itself has declined. Over the period there is some evidence that evasion has increased, especially latterly.¹² Equally it could be argued that due to changes in the structure and administration of taxation the scope for evasion has narrowed. In the absence of firm information there is no knowing which of these influences has been the stronger. If

¹²The Estimates Committee 1968/69, paragraph 342: 'we have had to apply relaxations to the normal work in order to implement the provisions of the Finance Act 1965 . . . easing up on investigations of wilful default, neglect, fraud.' Report of Committee of Public Accounts 1970 noted that back duty cases listed for action increased from 9,300 at March 1966 to 18,900, 28,600 and 31,000 on 31 March of the following years (full references are given in notes 14 and 15 respectively).

TABLE 22

<i>Year ended March 31</i>	<i>Number of charges raised</i>	<i>Total charge raised £m</i>	<i>Interest included in previous column £m</i>	<i>Net tax revenue raised by the Dept. £m</i>
1962	11,868	18.77	2.27	3,636
1963	10,944	14.02	1.89	3,752
1964	12,216	15.56	2.12	3,719
1965	12,405	15.97	2.13	4,072
1966	11,618	14.20	1.99	4,693
1967	11,154	14.72	1.97	4,997
1968	10,487	13.56	1.78	5,743
1969	8,983	13.23	1.86	6,546
1970	8,499	11.33	1.62	7,491
1971	9,033	11.76	2.33	8,180
1972	11,069	13.28	2.33	9,110
1973	11,792	15.43	2.35	9,248
1974	11,787	16.11	2.34	10,634

however charges for under-assessed tax had merely kept pace with the falling value of money they would have been £25 million in 1973/74 and if they had kept pace with rising tax revenues they would have been £54 million. Assuming no intervening change in compliance the Inland Revenue is now collecting under one-third of what it would have collected in unassessed tax had it maintained its 1962/63 ratio of extra charges to revenue raised. There are prima facie grounds for supposing that the effectiveness of the Department's enforcement activities has dropped considerably.

Objection to this conclusion can be made on two grounds. First, charges made on previously under-assessed income typically relate to periods beginning as much as six years before the start of the investigation. There is thus no automatic relationship between the cases settled in a given year and Inland Revenue enforcement activity in that year. This modifies the argument in the previous paragraphs only to the extent that it would therefore be necessary to lag the two series of figures by the average number of years taken to settle a case. As this period is not known, we cannot make fresh calculations. If this argument is right, we would expect the charge for under-assessed tax to rise much faster than tax revenues in the next few years. Second, it could be argued that the figures for unassessed tax reflect an improvement in compliance. The only way to settle this argument is to devise a measure of compliance itself. Without such a measure the above argument can only remain inconclusive, with those who believe the enforcement role has been maintained requiring proof that compliance has not improved to compensate. While admitting that the argument is inconclusive the author believes that there is greater

likelihood of a close relationship between effective enforcement and the output of charges for under assessed tax than there is between these charges and the level of evasion. Treating efforts to enforce taxation as a remainder to be financed from the total tax administration budget after prior calls have been satisfied is bound to produce drastic changes in the effectiveness of such efforts. Thus the aftermath of the 1965 Finance Act produced a massive transfer of Departmental resources from enforcement into administration and assessment. This is reflected in the decline in the charge raised for unassessed tax in the years 1966-1971. The abrupt squeeze on enforcement can only have encouraged evasion. By setting up a separate enforcement agency to which all delinquent cases of a given seriousness are referred, this state of affairs could have been avoided.

A further view of Inland Revenue efficiency is afforded by the figures for gross receipts, net receipts and repayments. These appear in total in Table 29 of the 117th Annual Report, an abstract of which is given in Table 23.

The Inland Revenue is empowered to make provisional collections of taxation prior to assessments being issued (for instance under the PAYE scheme). Where more is collected provisionally than proves to be subsequently due, repayment is made to tax payers. It is important in assessing the efficiency of tax administration to see that such provisional collections do not become unnecessarily large, because they represent the withholding of tax from tax payers to which the tax authorities have no ultimate right. Only recently has interest been paid to some tax payers to compensate them for temporarily losing the use of this money. Interest does not compensate for the restriction of economic welfare experienced

TABLE 23
Repayments of taxation

Year	(A) Gross amount collected by Inland Revenue	(B) Repayments	(B) as % of (A)
	£m	£m	
1960/61	3,612.5	394.0	10.9
1961/62	4,217.6	424.4	10.1
1962/63	4,388.6	448.7	10.2
1963/64	4,454.7	503.5	11.3
1964/65	4,873.8	522.0	10.7
1965/66	5,563.3	568.5	10.2
1966/67	6,032.8	681.8	11.3
1967/68	6,870.5	715.3	10.4
1968/69	7,720.6	736.2	9.5
1969/70	8,823.3	798.4	9.0
1970/71	9,763.5	815.4	8.4
1971/72	11,045.5	910.0	8.2
1972/73	11,609.7	932.6	8.0
1973/74	13,425.3	919.7	6.9

TABLE 24

Gross receipts and repayments of income tax

	(A) <i>Gross receipts £m</i>	(B) <i>Repayments £m</i>	(B) as % of (A)
1947/48	1,337	143	10.70
1957/58	2,541	319	12.55
1966/67	3,899	663	17.00
1967/68	4,501	687	15.26
1968/69	5,049	700	13.86
1973/74	7,937	801	10.10

by a tax payer who cannot take advantage of spending under circumstances which he deems abnormally favourable.

Given that over-collection of taxation is necessarily a defect, there remains the question of what level of repayments is tolerable. An examination of earlier Annual Reports shows that in the late 1940s and early 1950s repayments were running at 8.5% - 9.5% of gross receipts and that since this date the percentage has fluctuated in the range 6.9% - 11.3% with an average value of almost 10%. Repayments in 1963/64 and 1966/67 were abnormally high and the trend in most recent years has been steeply downwards. Further examination of the Annual Reports reveals that the bulk of repayments occur in relation to income tax. Table 24 sets out gross receipts and repayments of income tax.

In the 1960s repayments of income tax averaged 14.2% of gross receipts reaching a peak of 17.0% in 1966/67. Since then the percentage has dropped to what in 1973/74 looks like a normal level. Over-deduction of tax on the scale occurring in the mid to late sixties particularly when concentrated on one type of tax payer¹³ appears to be incompatible with administrative justice. In this respect the Department's efficiency has now improved.

Table 23 of the 117th Annual Report shows the state of collections at the end of each year for all Inland Revenue duties. Table 25 compares the charge raised for tax with the amount of tax outstanding between 1961 and 1974. The tax charge is either discharged by payment of the tax charged or by

remission. An outstanding amount remains at the end of each year which is due for payment. The table shows that although tax charged rose from £4,064 million in 1960/71 to £11,281 million in 1973/74 (plus 117%), amounts due for collection rose from £164.2 million to £1,003.9 million (over 500%).

The disparity between the rate of increase of tax charged and that of amounts due for collection has three possible explanations: changes in the structure of taxation have added to amounts outstanding; efficiency in collecting tax has decreased; resistance to paying tax has increased. The first explanation may apply to business tax collections. For instance, companies are no longer tied to a January 1 tax payment (which could easily be discharged by the end of the tax year) but pay tax in principle at a date nine months after the end of their accounting period. Similarly, assessments on unincorporated businesses are now made at any time of the year instead of early November and late March. We can shed further light on this by showing the analysis of tax due for collection in the last few years (Table 26).

We can see that income tax accounts for over half of the sums due for collection and that the rise in this figure has been about 61% compared with a rise

TABLE 25

Total tax charged and tax due for payment

<i>Year ending</i>	<i>Charge raised in year £m</i>	<i>Amount due for collection £m</i>
1961	4,064	164.2
1962	4,508	184.9
1963	4,686	193.4
1964	4,685	200.7
1965	5,114	223.7
1966	5,885	268.9
1967	6,215	335.8
1968	7,129	418.9
1969	8,088	517.6
1970	9,252	643.2
1971	10,187	885.6
1972	10,795	635.5
1973	11,281	703.2
1974	13,141	1,003.9

¹³Several possible victims spring to mind. As personal allowances were raised several times in this period, those with small investment incomes would have received bigger repayments. Exempt bodies entitled to repayments of tax on UK dividend income such as superannuation funds and charities were steadily growing in this period. Similarly the deterioration in the employment situation may have caused greater repayments in the PAYE system. If the increase in repayments could be shown to have been caused in these and similar ways little blame would attach to the Inland Revenue. The point remains, however, that repayments of this size cast some doubt on the working efficiency and fairness of the tax system.

TABLE 26
Tax due for collection £m

Year ending 31 March	Income Tax	Surtax	Corporation Tax	Capital Gains Tax	Other	Total*
1970	421.0	26.4	146.0	27.7	1.8	622.9
1971	555.3	64.5	188.3	40.3	0.6	849.0
1972	384.3	52.9	143.0	31.1	0.5	611.8
1973	418.6	42.5	171.7	59.8	0.3	692.9
1974	544.3	75.2	283.2	99.6	1.6	1,003.9

*These totals do not coincide with the totals shown in the previous table because of Inland Revenue revisions to figures.

in the charge raised for taxation of 42%. Thus the increase in amounts due for collection of income tax has been relatively slow in relation to other taxes. Amounts due for collection for surtax and capital gains tax have increased by a factor of about three. In the case of capital gains tax this increase is in line with increases in the amount charged to tax over the period. The increases in corporation tax and surtax due for collection at the year end have however been faster than increases in the sums charged to tax.

Much of the increase in the surtax figure for tax due occurred in 1974. We can also see that in 1974 of £424 million charged to capital gains tax £100 million or 23 per cent remained due for collection at the year end. We cannot deduce from these facts why tax due for collection at the year end has increased so abruptly. We can say that the increase is concentrated in capital gains tax, surtax and corporation tax and that the level of outstanding collections for capital gains tax is and has been abnormally high in relation to other taxes.

Tables 27 and 28 of the Annual Reports show amounts of tax considered to be irrecoverable and the grounds on which tax has been written off as irrecoverable. An extract is given in Table 27.

Tax deemed to be irrecoverable has increased at several times the rate of increase of actual tax revenues. Tax irrecoverable due to disappearance of the tax-payer has grown even faster than irrecoverable tax. This points either to a decrease in Inland Revenue efficiency in tracing tax-payers or an increased determination on the part of tax payers to elude the authorities.

Summary and conclusion

While the direction of productivity growth is suggested by the official figures relating administrative costs to net revenue, these figures do not indicate its extent. Our figures based on a very rough application of productivity measurement to the Inland Revenue reveal sturdy long-term growth in the Inland

Revenue of the order of 16 per cent in the last 14 years on a collections definition of output. It has been suggested above that the apparently rapid rate of productivity growth in the late sixties was at the expense of quality of service. That the Revenue's efficiency did decline at this time is amply demonstrated by the Report of the Estimates Committee 1968/69,¹⁴ the evidence of Sandford and Dean,¹⁵ and of the Inland Revenue itself.¹⁶ These impressions are confirmed by the indicators of efficiency discussed above (amounts of tax outstanding for payment, repayments as proportion of gross receipts, charges for unassessed taxation, amount of tax written off as irrecoverable). The thesis that the decline in aggregate productivity following 1969/70 was simply a reflection of the build up of labour resources so that standards of service could be restored to their former level is supported by the recent improvement in the tax

¹⁴5th Report of the Estimates Committee, 1968/69, House of Commons Paper, HMSO.

¹⁵C. T. Sandford and P. N. Dean, 'Accountants and the Tax System', *Accounting and Business Research*, Winter, 1971.

¹⁶113th Annual Report of the Inland Revenue, Cmnd 4615, HMSO, 1971.

TABLE 27

Accounting year	Total irrecoverable tax £m	Of which irrecoverable because tax payer untraceable £m
1962	3.3	0.7
1963	4.2	0.8
1964	4.3	0.9
1965	3.6	0.8
1966	4.8	1.2
1967	5.6	1.9
1968	7.0	2.7
1969	9.8	4.4
1970	10.3	4.4
1971	13.5	6.9
1972	20.4	8.5
1973	23.9	8.1

outstanding position as a proportion of tax charged, the upturn in charges for under-assessed tax, and the fall in the proportion of repayments to gross receipts.

What is not clear from our figures is the extent to which a change in compliance has affected Inland Revenue efficiency. Put another way, we believe that Inland Revenue efficiency has suffered a decline followed by a recent recovery but we do not know whether to explain this in terms of factors internal to the Department or factors over which the Department has only minimal and indirect control. A programme designed to monitor compliance would be useful in attempting to answer this question.

In conclusion, we can list the following ways in which the Revenue could improve its figures for costs, output and administration to give a more realistic picture of its efficiency in relation to the administrative constraints within which it works:

1. The content and meaning of cost figures should be improved by explicit recognition of the amount of capital spending by other civil service departments on behalf of the Department.
2. Separate costings of the administrative cost of PAYE and corporation tax should be produced and published.
3. The Department should publish the precise formula used for making apportionments of cost (particularly those relating to the cost of collecting social security payments and to the services of the Valuation Office to other departments).
4. The Department should adopt the productivity measurement concept as a means of demonstrating its achievements, rather than the unsatisfactory administrative cost as a percentage of net receipts.
5. The Department should publish for each tax a detailed breakdown of assessments by size of tax liability (as it does at present for capital gains tax) and should specifically comment on the economics of collecting taxation from the lower ranges of assessable income (or wealth).
6. The tables already produced by the Department on matters such as state of collections, outstandings, charges made for previously under-assessed tax etc., should be revised so as to provide an idea of trends. This implies a rather more detailed written account of administrative problems and background. Where apparently anomalous changes have occurred the Department could indicate to what extent they were the result of structural changes in the system rather than of the Department's own efficiency or of external circumstances.
7. The Department should explore means of measuring changes in compliance in order to indicate to what extent changes in its apparent efficiency in raising taxation are the result of external factors.

The starting point of this article was that the Annual Reports of the Inland Revenue are not examined in any great depth outside the system of government financial scrutiny. We are now in a position to suggest reasons for this. First we must mention the general apathy of tax payers and their failure to channel opinions concerning desirable levels of public expenditures, which is one of the root problems of a truly accountable public sector. More particularly we must look for reasons to the Inland Revenue Annual Reports themselves. In any work of financial analysis the outsider is left with the job of making deductions and interpretations. Analysing these reports however is a game of hunt the thimble. The very basis of Inland Revenue cost figures is open to question. This is partly a reflection of government accounting standards but even more the effect of the Department's failure to explain where figures come from, on what they are based, what they include and what they represent. These difficulties are compounded by the Department's failure to publish cost figures for the administration of each tax. When we examine tables concerning under-assessments, repayments, tax due for payment, and irrecoverable tax, there is a striking omission on the part of the Department to comment except in the briefest fashion on anomalous movements or significant trends. If the Department is concerned with administration rather than policy, why does it not bring regularly to our attention the mass of capital gains, unincorporated business and corporate tax assessments which cost disproportionate amounts to administer? There is quite literally the possibility that for hundreds of thousands of assessments no net revenue is collected over and above the Department's own costs and the costs of tax payers and their representatives.

The basic reason then for commentators failing to examine the Inland Revenue is that its reports discourage interpretation and defy analysis. We have suggested several ways in which the reports could be made clearer and fuller, changes which would make most sense in the context of a thoroughgoing reappraisal of the function of these reports. Such a reappraisal is clearly overdue. The explanatory text is to a large extent divorced from the tables of data. Large parts of the text are devoted to reviews which could perhaps be more suitably published elsewhere. Statistical tables give the impression of being holes to be filled year after year without much concern for the meaning of the information presented or the purpose of its inclusion. Lists of properties and works of art acquired in lieu of tax read like auctioneers' lists. A reappraisal of the sort suggested could look afresh at the overall impact that the report is designed to achieve, the contents necessary to achieve this and,

the relative importance in a reporting context of different aspects of Inland Revenue operations. The result could be a coherent and meaningful account of the Inland Revenue's work giving readers without access to other government publications a comprehensive understanding of the problems and achievements of tax administrators. Surely as tax payers this is the minimum standard of accountability to which we are entitled.

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Physical Capital Maintenance in Income Measurement – An Exemplification

E. A. French

Introduction

It is now generally accepted that in periods of inflation the traditional accounting measurement of income is unsatisfactory. Thus much of the debate on how accounts should be adjusted to accommodate changing prices has centred upon the definition of profit. Two main views have emerged.¹ The first is that, in ascertaining profit for a period, the replacement cost of inputs used should be offset against revenue. The second is that the correct charge is discovered by adjusting the historical cost of the inputs by a factor representing the change in the general purchasing power of money since their acquisition. In a pure inflation the two approaches produce the same measure but when relative price changes are superimposed on a general price rise this is no longer so.

This can be illustrated by an example. Consider a firm whose business consists of the purchase and resale of a sole article which is acquired at a price of £100 and sold one year later for £400. During the year the general price index rises from 100 to 200. At the end of the year the replacement cost of the item to the firm is £300. Three different measurements of profit can be made:

	(1) <i>Traditional accounts</i>	(2) <i>General index adjustment</i>	(3) <i>Replacement cost</i>
Sales	400	400	400
less cost of goods sold	100	200	300
Profit	300	200	100

They reflect three different approaches to capital maintenance: namely the preservation of money capital (£100), economic capital (the command of an equivalent real purchasing power) and physical capital (the replacement of the goods concerned). Selection from amongst them requires some criterion of choice. If we disregard the discredited traditional calculation our preference between the remaining two is likely to depend on our views on the purpose of capital maintenance.

A commonly held opinion is that income measurement serves as a guide to people when they are ordering their affairs, especially their consumption and investment decisions. Here the notion of preserv-

¹A clear exposition of these views can be found in R. S. Gynther, *Accounting for Price-Level Changes: Theory and Procedures*, (Oxford, 1966) Ch. 7. He there quotes the work of J. St. G. Kerr: 'Under the adjusted historical cost concept of income (i.e. using one general index) the original capital contributed is considered as providing a pool of purchasing power units which are invested in various forms and on realisation represent another pool of purchasing power units. The capital to be maintained intact is represented by the purchasing power units in the original contribution and this is effected when the money value of capital has increased in proportion to the general price level. . . . Under the current cost concept of income (i.e.

using several specific indices) the emphasis is placed on things, physical assets, rather than on money or purchasing power units, as a result of which the capital at the beginning of the period is considered as comprising a group of physical assets which is eventually converted into funds, a portion of the funds being used to replace the physical assets and the balance being the income for the period. We then have a change from accounting for things in terms of money or purchasing power units, to accounting for money in terms of things, and the capital which is being maintained intact is the real physical capital and not the financial capital, or a pool of purchasing power', Jean St. G. Kerr, *Australian Accountant*, April 1956, p. 141.

ing economic capital seems sensible. It produces a measure of income that can be spent and leave an individual no worse off in real terms at the end of a period than he was at its beginning. Preserving physical capital will not necessarily do this. If the relative price of the item involved changes such a policy automatically causes an alteration in real investment. In our example the relative increase in the price of the goods results in an extra real investment of £100 (£300 - £200).² Although the physical size of the business remains the same it is now a larger economic entity.

However, any income calculation based upon the increment to a stock, whether measured in economic or physical terms, is an imperfect guide to consumption decisions. How to allocate a given endowment of wealth between investment and consumption at a point in time is a separate question from establishing the measure of its growth over a period of time. A man due to be executed at the end of the forthcoming week will be unlikely to limit his consumption in that period to some estimate of the increment to his capital. He will probably wish to consume a good deal of his wealth. Despite this, a measure of income that relies upon economic capital maintenance is often a helpful guide to consumption decisions.

This may not be so in circumstances where the maintenance of capital is the objective on which policy is based. Human conduct in many areas suggests that preserving things *in specie* generates utility for individuals. The conservation movement is founded on this idea and a glance at English legal history reveals many instances where affairs have been dominated by a strong desire to maintain physical entities. The landowner who entailed his estates would have looked askance at a suggestion that, because the relative value of his ten fields had increased by 11 per cent, he should sell one of them, use the proceeds for his own consumption, and only transmit the remaining nine to his heir. Neither would he have been attracted by the same argument when applied to heirlooms.

The property of the Church of England – general considerations

Thus the notion of the maintenance of physical capital cannot be summarily disregarded. In the

absence of empirical studies a general review of the affairs of an institution which so ordered its consumption decisions may reveal some implications of such a policy. A body which operated on this basis for several hundred years before the turn of the century³ was the Church of England.

In its early existence the church in England was a regionalised organisation. For six or seven centuries each episcopal district contained only one parish. The bishop and his clergy resided together at the cathedral and enjoyed a community of church property. Such collegiate life of the bishop and his clergy was the practice of the British and was afterwards adopted by the Saxon church.⁴ But the desire of the population for a local ministry became and remained strong. Pressures were generated for the decentralisation of the church.

Resources were necessary for a local ministry, namely a church building and a rector who dwelt nearby. Both had to be maintained; the church had to be kept in repair and periodically rebuilt, while the rector needed a residence and the means of sustenance.

Nearly all organisations are financed either by the sale of the goods and services they produce or by the proceeds of taxation. The church is an exception. Although at times in its history it has been helped by compulsory levies, such as tithes and church rates, its main source of finance was and is the gifts of the faithful, living and dead. Hence the original foundation of a local church usually depended upon endowment by a patron.⁵ He would give sufficient land and money for the church, the churchyard and the parsonage house and the glebe lands for the sustenance of the incumbents. In return for his gifts the patron acquired the right to present to the bishop the person whom he wished to be rector. The bishop,

³No attempt is made here to state the current law of property as it applies to the Church of England. Those interested in this can consult *Halsbury's Laws of England*, 3rd ed., Vol. 13, Part 6, pp. 373-485 or E. Garth Moore, *English Canon Law*, (Oxford, 1967).

⁴An excellent account of the early history of the church in England can be found in the judgment of Bolland B. in the case of *Mirehouse v Rennell* [1833] 7 Bli. (N.S.)269.

⁵*ibid.*, p. 270: 'Many causes contributed to the existence of parochial churches. In some place the liberality of the inhabitants raised them, and by supplying preachers with houses induced them to settle and become the pastors; Kings founded free chapels for the purpose of worship for their court and retinue. The Bishops, too, to plant and encourage Christianity amongst the people, built churches, but the great source from whence the increase of the number of buildings for divine worship arose was the piety of the great lords, who having large possessions and territories, founded churches for the use of their families and tenants within their respective domains, and hence it seems a title to patronage in laymen first sprung.'

²F. W. Paish put this argument to the Royal Commissioners on the Taxation of Profits and Income in 1952. (F. W. Paish, *The Estimation of Business Profits in Periods of Changing Prices*, Minutes of Evidence, Royal Commission on the Taxation of Profit and Income, HMSO, 1952). His converts include W. T. Baxter (W. T. Baxter, *Accounting Values and Inflation* (Maidenhead, 1975)).

to preserve ecclesiastical propriety, could refuse to appoint the person so presented. Nevertheless this patronage was considered a valuable right. It became an item that could be marketed or transmitted to others on death.

For years there was confusion over the nature of the property interests of the patron and the incumbent in the assets of a church so created. The bishop also was interested in the property. The common law rule emerged that the three of them, acting in unison, could deal with it as they saw fit.

The continuance of a local ministry required that the assets of the church devolved to successive incumbents. Over time the bishops had been able to erode the original property rights of the patron. But if the ownership of the church assets was not in the patron the question arose as to where it vested. It was impolitic to make the rector the owner for he might then sell the property for his own purposes and defeat the objective of a continuing local ministry. A solution was found by personifying the office of the incumbent as a corporation sole. The present rector, his predecessor and successor were viewed as the same juristic person. The incumbent for the time being was then granted a life interest in the reality of the church. The one function of the corporation sole was to act as conduit pipe through which this real property would pass to his successor.⁶

Those who advocate the use of physical capital maintenance in income measurement lay stress upon the concept of the business as an entity, separate from its members, whose continuance should be perpetuated.⁷ Thus it is perhaps not surprising to find that the idea of physical capital maintenance dominated income determination in the ecclesiastical corporation sole. An incumbent's use of the church property was limited by his obligation to transmit it to his successor physically unimpaired.

Consecrated land

This policy of physical capital maintenance can be examined by looking at the constituent parts of the

endowment. Let us begin with the church and churchyard. At the foundation of the living the bishop would consecrate them. The notion was that the land, which had been given by God to man, was given back to God by man. On being consecrated it was removed from secular use and dedicated for all time to sacred purposes. The essential act which in law consecrates the land and buildings is the signature by the bishop of the sentence of consecration by which he separates and sets them apart from all profane and common uses whatsoever, dedicates them to the service of Almighty God for the performance of divine offices and consecrates them for the celebration of divine offices. The sentence further pronounces, decrees and declares the building 'to be so separated, dedicated and consecrated and that it ought to remain so for ever'.

The effect of consecration is to bring the land and buildings within the jurisdiction of the ecclesiastical courts. Thereafter no alteration can be made to them save with the leave of a faculty granted by these courts. The grounds upon which faculties can be granted are extremely limited. They can be issued for an ecclesiastical use provided the ecclesiastical purpose is a substantial and not an incidental part of the whole proposal. For example the building of a church vestry or a church school can be permitted. Apart from wayleaves they can only be granted for a secular user provided the purpose for which the land was originally consecrated can no longer be achieved.

The restrictions on the use of consecrated land illustrate some facets of physical capital maintenance. An instance which repays study is the case of *Re St. John's, Chelsea*.⁸ The church and vicarage of St. John's, Chelsea, occupied a triangular site, the vicarage being at the apex and the church at the base. The ground on which the church stood was consecrated; that on which the vicarage was built was not. During the second World War the Germans bombed the site and destroyed both buildings. Henceforward the work of the parish was conducted from other premises. Eventually an agreement was made to lease the site of the vicarage to a garage company for a petrol filling station. The company wished to use the consecrated church site for access to the petrol station and as a car park. It was prepared to pay a substantial rent for such use. It petitioned the ecclesiastical court (the London Consistory Court) for the necessary faculty. Despite the fact that it was somewhat doubtful if the church would ever be rebuilt on that site, as population movements

⁶These developments are described by F. W. Maitland in his classic article 'The Corporation Sole', 16 *Law Quarterly Review* (1900), pp. 335-354.

⁷R. S. Gynther, op. cit., pp. 44-45: 'If it is felt that the whole purpose of accounting is to look after the interests of the shareholders or proprietors then it is almost certain that the use of one general index will be favoured for profit determination purposes. . . . However if it is believed that the whole or prime purpose of accounting is to assist the entity (the firm) in its daily struggles (and that only in this way will the interests of the shareholders be looked after in the long-term) then it is almost certain that the use of specific indexes will be favoured i.e. so that the physical assets of the business will be maintained during the period of changing prices.'

⁸*Re: St. John's, Chelsea* [1962] 2 All E.R. 850. The case contains a thorough exposition of the law of consecration.

had made it rather inconvenient, the deputy chancellor refused to grant a faculty. The proposed user was not for an ecclesiastical purpose. As the original intention for which the ground had been consecrated could still be achieved, there was no power in the court to grant a faculty for secular use.

The case shows that physical capital maintenance brings a degree of fossilisation into economic affairs. Land is scarce and should be sensibly employed. Had the proposed user in the St. John's case been allowed, the church would have benefited from the rent, the local community would have obtained a petrol filling station and the garage company might have made a profit. As it was, the land remained vacant, available as a site in the unlikely event that it should be decided to reconstruct the church there. Only in this event was the objective of providing a local ministry advanced.

In an age of rapid technical change and economic development it might be suspected that the restrictions on user imposed by consecration would generate pressure for their relaxation. Interestingly enough, the first modification operated in the opposite direction. At common law a disused burial ground could be employed for secular purposes. Section 3 of the Disused Burial Grounds Act 1884 altered this.⁹ It provided that 'it shall not be lawful to erect any buildings upon any disused burial ground, except for the purpose of enlarging a church, chapel, meeting house or other place of worship. However, with the increasing secularisation of society in the 20th century relaxations were introduced by statute. The first are to be found in Section 28 of the Town and Country Planning Act 1944,¹⁰ which authorised many developments of consecrated land and burial grounds which the old restrictions forbade.

While consecration helped preserve the church it did nothing to keep its fabric in repair. This was achieved by imposing a duty on the churchwardens to maintain the body of the church, save for the chancel. Until 1868 they had powers of raising compulsory church rates for this purpose and so the performance of the obligation was mandatory whatever the circumstances – a fine instance of physical maintenance. In 1868 the Compulsory Church Rates Abolition Act¹¹ was passed and the churchwardens were thereafter only liable for those repairs for which they had funds. Repair of the chancel was usually the responsibility of the incumbent, presumably

because it was the part of the church reserved to his exclusive use. This duty was a reflection of his wider responsibility of preserving the vicarage, to a consideration of which we now turn.

Dilapidations

Although the vicarage was not usually consecrated there was, by both canon and common law, a rule of great antiquity that imposed on the present incumbent a duty to maintain it in repair. In 1238, in the provincial constitution of Edmund, Archbishop of Canterbury, it was provided that 'if the departed rector of any church shall have left the church's buildings destroyed or in ruins, there shall be deducted from his ecclesiastical wealth a portion sufficient for the repair of these things and for making good the other defects of the church'.¹² Similar provisions are to be found in the Council of Cardinal Othobon, 1268, and at common law.¹³ This duty to repair was taken very seriously. It is recorded that the Bishop of Lichfield and Coventry was suspended for allowing the buildings for which he was responsible to become dilapidated.¹⁴

Thus the benefit the incumbent received from the vicarage was based on a concept of income founded on the maintenance of physical capital. The clearest illustration of this is provided by the case of *Wise v Metcalfe*.¹⁵ The headnote states the position: 'An incumbent of a living is bound to keep the parsonage-house and chancel in good and substantial repair, restoring and rebuilding where necessary, according to the original form, without addition or modern improvement; but he is not bound to supply and maintain anything in the nature of ornaments such as painting (unless that be necessary to preserve exposed timber from decay) and white-washing and

¹²Ross v Adcock L.R., 3 C.P. 665: 'The earliest provision on this subject with which we are acquainted, is to be found in the Provincial Constitution of Edmund Archbishop of Canterbury 21 Hen. 3 in the year 1238, "Si rector alicujus ecclesiae decedens domos ecclesiae reliquerit dirutas vel ruinosas, de bonis ejus ecclesiasticis tanta portio deducatur quae sufficiat ad reparandum haec, et ad alios defectus ecclesiae supplendos" Lyndwood, Lib., III tit 27. page 250'. I am indebted to Richard Macve for the translation.

¹³ibid., p. 666: 'At one time, in conformity with the principles of common law, it seems to have been considered that an action such as the present would not lie against the executors of a deceased incumbent. Precedents, however, of this form of action more than three centuries old exist.'

¹⁴Wise v Metcalfe 10 B. and C. 303: 'The Bishop of Lichfield and Coventry was suspended for dilapidations and the profits of the bishopric where sequestered, and the episcopal palace built out of them. Dr. Wood's case (cited 12 mod., 237)'.
¹⁵ibid.

⁹47 & 48 Vict., c. 72 (An Act for Preventing the Erection of Buildings on Disused Burial Grounds).

¹⁰7 & 8 Geo. 6 c. 47.

¹¹31 & 32 Vict., c. 109 (An Act for the Abolition of Compulsory Church Rates).

papering; and in an action for dilapidations against the executors of a deceased rector by the successor, the damages are to be calculated upon this principle'.

Wise v Metcalfe also shows how difficult it is to attach a precise meaning to the idea of physical maintenance. Three standards were proposed in the case. The first was that the buildings ought to have been left 'in good and substantial repair; the painting, papering and white-washing being in a proper decent condition for the immediate occupation and use of the successor.' The second was that the buildings should be 'repaired to the standard they ought to be left in by an outgoing lay tenant who is bound by covenant to leave them in good and sufficient repair, order and condition'. The third was that they should have been left 'wind and water-tight'. The estimates of repairing to these three standards were, respectively, £399.18.6, £310 and £75.11.0. In the event the judge, Bayley J., rejected all three tests and adopted the one described. To repair to this standard was estimated to cost £369.18.6. It is to be noted that 'the rectory house is an ancient structure, built with timber and plastered on the outside and has upon it the date 1624'.¹⁶ The implication of the case is that all future incumbents would be compelled to dwell in a building designed to standards deemed appropriate in the early 17th century.

The duty to repair, if it had been neglected, was enforced by the incumbent suing the representatives of his predecessor. This was a cumbersome, unedifying¹⁷ and expensive procedure. A new arrangement was introduced by the Ecclesiastical Dilapidations Act 1871,¹⁸ whereby the bishop appointed an independent surveyor whose function it was to determine the extent of the dilapidations and the amount consequently owed to the incoming incumbent. Despite this, disputes over the meaning of the physical maintenance of the rectory continued. In *Kimber v Paravicini*¹⁹ the benefice had been sequestrated²⁰ and the bishop, as provided in the Act, ordered the surveyor

to make an inspection of the buildings. The surveyor estimated the cost of the necessary repairs to be £140. The sequestrator, considering this sum inadequate, spent a much larger amount on restoring the buildings. Keen to prevent the resurgence of such disputes, the court, in accordance with the provisions of the Act, decided that the extra expenditure must be disallowed.

Many different time patterns of proprietary interest can be created in long-lived assets and the church discovered that a concentration on physical magnitudes caused difficulties. Abuses emerged which vitiated the aim of a continuing local ministry. For example the rector would make a long lease of the vicarage (and glebe lands) and appropriate the capital sum so obtained to his own use, thus depriving his successor of the accommodation and sustenance of the living. Or he would allow the vicarage to become ruinous and, by making gifts *inter vivos*, die penniless. The cost of repair would fall upon the successor, to the unjust advantage of the beneficiaries of the gifts.²¹

By 1570 such practices had become widespread, causing the enactment of the statute 13 Eliz., c.10. This, by Section 3, prohibited the leasing for more than 21 years (or three lives) of the buildings of the benefice. The rent, to prevent other obvious frauds, had to be a fair rent, paid annually. The Act also, by Section 2, gave the incoming incumbent a right of action against those who had received gifts which should rightly have been used for repairing the vicarage.

Another weakness in the system was that incoming incumbents, when they obtained money through a dilapidations action, were not compelled to spend it on repairs. Sometimes they used it for other purposes, to the possible prejudice of their successors. Section 18 of the statute 14 Eliz., c.9. attacked this practice by providing that all money so received had

¹⁶*ibid.*, pp. 299-300.

¹⁷Until the Report of the Ecclesiastical Courts Commission of 1832 the proceedings were carried on in a criminal form. See Sir R. Phillimore, *Ecclesiastical Law*, (2nd ed., 1895), p. 1255.

¹⁸34 & 35 Vict., c. 43.

¹⁹*Kimber v Paravicini* (1885) L.R., 15 Q.B.D. 222.

²⁰Sequestration is the legal means by which the creditors of an incumbent can obtain satisfaction of their debts out of the profits of his benefice. It is obtained by a writ sued out of the court in which a judgement or order has been obtained for payment of the debt, after a writ of execution has been issued to the sheriff and the sheriff has made a return that the debtor has no goods or lay fee out of which the debt can be satisfied but that he is incumbent of a benefice named in the return.

²¹See the preamble to 13 Eliz., c. 10: 'Where divers and sundry Ecclesiastical persons of this realm, being endowed and possessed of ancient places, Mansion-houses and other edifices and buildings, belonging to their Ecclesiastical benefices or livings, have of late years not only suffered the same for want of due reparations partly to run to great ruin and decay, and in some part utterly to fall down to the ground, converting the timber, lead and stones to their own benefit and commodity; but also have made deeds of gift, colourable alienations, and other conveyances of like effect of goods and chattels in their lifetime, to the intent and purpose, after their deaths, to defeat and defraud their successors of such just actions and remedies as otherwise they might and should have had for the same against the executors or administration of their goods, by the laws Ecclesiastical of this realm to the great defacing of the state ecclesiastical, and intolerable charges of their successors, and evil precedent and example for others, if speedy remedy be not provided.'

to be spent within two years on repairs to the buildings; otherwise double the sum not so used was forfeit to the Crown. This sanction appears to have been less than totally effective and in 1777 re-enforcing provisions were enacted.²²

The dilapidations action, as a method of securing the repair of the buildings, was a weak arrangement even in the absence of fraud. An impoverished rector could avoid expenditure on repairs and, if he died leaving no assets, his successor would be left with no effective remedy. What was required was an independent inspection of the buildings at regular intervals coupled with a compulsion to make good any defects so disclosed. Such an administrative arrangement was eventually provided by the Ecclesiastical Dilapidations Act 1871²³ – the foundation of the present arrangements.

The Act imposed on the archdeacon and rural deans of each diocese the duty of appointing a surveyor for their area. They, or the patron or incumbent, could then order the surveyor to inspect the buildings of the benefice. This done, it became the duty of the incumbent to execute the works declared necessary by the surveyor. After he had done this no further survey could be ordered for a further five years unless the benefice became vacant, by death or otherwise, in which event the bishop had to order an inspection. The sum the surveyor then certified as being required for repairs became a debt due from the old to the new incumbent and stood in the place of the common law action for dilapidations.

A new method of financing repairs was also introduced. Incumbents were henceforward permitted to borrow money from the governors of Queen Anne's bounty to effect the repairs certified as necessary by the diocesan surveyor. The governors had to open an account for each benefice which was debited with all such loans. When the benefice was vacated the unpaid balance on this account became a debt due by the old to the new incumbent.

Although such loans eased matters they did not prevent incumbents from getting into financial difficulties. If they became insolvent their benefices were sequestrated. Should they then die, with debts outstanding for repairs, the question arose of who was to meet them, the creditors of the deceased incumbent or the new rector. It was decided in 1875, in the case *Jones v Dangerfield*,²⁴ that the sequestrator

could not deduct the sums due for repairs from the profits of the benefice that were in his hands. It was the incoming rector, rather than the creditors of the old incumbent, who had to bear the cost of the previous dilapidations. Thus, even after the reforms of 1871 there was no guarantee that a succeeding incumbent would receive a physically sound vicarage or the wherewithal to make it sound.

The Ecclesiastical Dilapidations Act 1871 continued the policy of the physical maintenance of the buildings. It assumed that their initial size was, and always would be, appropriate to the purpose intended. A mistake in the original scale would be perpetuated from generation to generation (a feature common to all ideas of capital maintenance). If the error was that the building was too large the position of the incumbent was unfortunate. At common law he had no right to sell the vicarage and the church insisted that he live in it. He was thus forced to consume a disproportionate part of his income on accommodation – a complaint still current among impoverished parsons compelled to live in and maintain vicarages of a size reflecting the notions of social status of an earlier age.²⁵

Nevertheless, if we study the statute book, we can observe a softening of the concept of physical maintenance when it threatened absurdity. Sections 7 to 9 of an Act of 1838²⁶ gave the incumbent of an inconveniently situated residence a power to sell it and use the money to build or buy an alternative vicarage, provided the bishop and archbishop consented. Section 6 similarly permitted him to convert old benefice houses into farming buildings for the tenants of the glebe. The Ecclesiastical Dilapidations Act 1871, by Section 71, further liberalised matters by allowing, subject to certain safeguards, the removal of any unnecessary part of any glebe house.

Vicarages were damaged by fire and acts of God as well as by depreciation. When this occurred the common law doctrine of the physical maintenance of the buildings implied that the present incumbent had to reconstruct them. This, leaving aside the unresolved question of the standard of renewal, was an unfortunate inference. A rector so afflicted could be impoverished by the work of a reconstruction. The difficulty could be avoided if the premises were insured but not all rectors were worldly enough to insure of their own volition. Consequently fire insurance was made compulsory. It was first required

²²17 Geo. 3, c. 53 (An Act to promote the residence of the parochial clergy by making provision for the more speedy and effectual building, rebuilding, repairing, or purchasing houses, and other necessary buildings and tenements, for the use of their benefices) s. 9.

²³op. cit.

²⁴*Jones v Dangerfield* (1875), 1 Ch.D. 438.

²⁵Guy Mayfield, *The Church of England* (Oxford, 1958), p. 42.

²⁶1 & 2 Vict., c. 23 (An Act to amend the law for providing fit houses for the beneficed clergy). The power of sale could also be exercised for 'other good and sufficient reasons'.

for new buildings in 1838.²⁷ Sections 54 to 56 of the Ecclesiastical Dilapidations Act 1871 extended it to all structures, including the chancel of the church when the vicar was bound to maintain it.

The glebe lands – farming

A living had to furnish sustenance for the incumbent. One popular arrangement was to provide lands for him to farm. This method of finance, however, contained an inherent contradiction. The time the rector devoted to farming was not available for his ministry, which was the whole purpose of his local establishment. From 1838 onwards restrictions were imposed upon the acreage an incumbent was allowed to farm.²⁸

The statute 13 Eliz. c.10 prevented the alienation or leasing of the glebe land and so, between 1570 and the passing of the Glebe Lands Act 1888,²⁹ a reduction of the acreage devoted to the parson's support was virtually impossible. Despite this policy of physical capital maintenance the income of the incumbent fluctuated from year to year in response to the vagaries of markets and harvests, the state of agricultural technology, and the degree of skill and effort he put into farming.

A constant income also required the land to be kept in good heart. The object of securing a continuing local ministry could well have been defeated if the predecessor was allowed to pass on the land in an exhausted condition to his successor. The common law action for dilapidations should logically have applied both to the glebe and to the rectory. That it applied to the hedges and fences of the glebe was decided in the second case of *Bird v Relp*.³⁰ But it was held in their first action³¹ that it did not apply to the glebe itself.

Bird's complaint was that the value of the lands had been greatly reduced by the unhusbandlike manner in which his predecessor had cultivated them. He argued that the principle upon which the dilapidations action was founded was that the incumbent for the time being should have the beneficial use of the

property belonging to the living. If the action was not available for miscultivation of the glebe, the principle would be offended.

All four judges rejected this argument. Two were content to say that there was no authority that bound them to find for the plaintiff (perhaps they were concerned about the wisdom of holding a vicar, whose prime function was the cure of souls, liable for miscultivation). Denman C. J. included another reason. His judgement, in which Littledale J. concurred, runs as follows: 'This is an entirely new application. To render the executors of an incumbent liable to an action for dilapidation there ought to be something of demolition. There is no ground for saying that executors are liable to such an action for mismanagement of the glebe lands'.³² In other words physical maintenance here meant the preservation of a given quantum of land irrespective of its ability to generate future benefits. This possibility of economic destruction without any accompanying physical destruction made the test of the maintenance of physical capital a very poor guide to consumption decisions. The successor must have felt the criterion did little to forward the basic aim of financing a continuing local ministry. He may also have doubted the wisdom of a law which insisted that dilapidated fences be repaired, because there had been some measure of physical destruction, while at the same time permitting the land they enclosed to be rendered worthless.

The glebe lands – timber

*Sowerby v Fryer*³³ shows that the common law applied this rigid notion of physical capital maintenance to timber that was growing on benefice land. There was a right to use such trees to provide wood for necessary repairs to the vicarage but any other felling of timber was prohibited. If the trees were inconveniently located then the rule was relaxed to the extent of allowing the timber to be sold and the money used to buy other wood nearer to where it was needed. But there was no power to form a general repairing fund from the sale of trees.

This requirement that the timber be used only for repairs often meant that it was not used at all.³⁴ It is true that trees take many years to grow and that a rector who was allowed to harvest them might reap an economic advantage which had accrued over several incumbencies. But accounting arrangements could have been devised to deal with this equitably. The common law was thus insensitive to the problems

²⁷1 & 2 Vict., c. 106 (An Act to abridge the holding of benefices in plurality, and to make better provision for the residence of the clergy) s. 67.

²⁸1 & 2 Vict., c. 106, s. 28.

²⁹51 & 52 Vict., c. 20.

³⁰*Bird v Relp* (1835) 2 Ad. & E. 773. The headnote runs: 'An allotment made to a vicar in lieu of tithe, under an enclosure Act, is subject to the law and custom of England as to dilapidations equally with the ancient glebe, and if, when he comes into it, there are fences upon it which he ought to repair, but he dies leaving them unrepaired, his executors are liable at the suit of his successor.'

³¹*Bird v Relp* (1833), 4 B. & Ad. 826.

³²*ibid.*, p. 830.

³³*Sowerby v Fryer* (1869), L.R. 8 Eq. 417.

³⁴Guy Mayfield, *op. cit.*, p. 100.

that the strict approach to physical maintenance here created. It rendered otherwise valuable assets virtually worthless. Some of the judges sought to ameliorate this difficulty, but their efforts were brought to little.³⁵ To this day, the restrictions still limit the use the church can make of its timber.³⁶

The glebe lands – mines

The rules relating to the working of mines in the glebe lands (again founded on the notion of physical maintenance) imposed even greater limitations on sensible economic management than those relating to timber. Before 1570 new mines could be opened, but statutes of Elizabeth I prohibited them.³⁷ Henceforward only mines which existed prior to the restraining Acts, or open mines which came as part of any fresh endowment, could be worked. Subsequent discoveries of minerals conferred no advantage to the living. The incumbent was forbidden to extract them, capitalise the sale proceeds, and so produce a perpetual investment income for the benefice. This made the minerals worthless, both for the church and the economy at large.³⁸

Such a rule seems so inconvenient that one would expect it would be speedily annulled. This was not the case. It held sway until 1842 when it was reversed by statute.³⁹ Inevitably, in this period of 270 years attempts were made to circumvent the rule. One such is recorded in the case of *Huntley v Russell*.⁴⁰ There the plaintiff incumbent alleged that his predecessor had wasted four acres of the glebe land by opening about a hundred pits for the mining of gravel. The holes had not been filled in nor the ground levelled. The plaintiff assessed the damages at £500.

³⁵*Sowerby v Fryer*, op. cit., p. 417: 'and the expression of Lord Hardwicke in *Knight v Mosley* that "parsons have been indulged in selling timber and stone where the money has been applied in repairs", merely means that where the trees or the quarries are far distant from the spot where they are wanted, the timber or stone may be sold and similar materials purchased on the spot with the proceeds'.

³⁶Halsbury, *The Laws of England*, (3rd ed., 1955) 13, pp. 421-422. The restrictions do not apply to trees that are actually dangerous.

³⁷13 Eliz., c. 10; 13 Eliz., c. 20; 14 Eliz., c. 4; 14 Eliz., c. 14.

³⁸*Ross v Adcock*, L.R. 3 C.P. 665. Byles J. put the point well: 'But in the cases just mentioned, as in the case now before us, repair or restitution being impossible, no measure of damages seems to be left but the value of the coals or copper or gravel. Can that value be a proper measure of the damages inflicted on the successor? Is the successor to capitalise and appropriate to his own use a value which upon his own hypothesis he could not have enjoyed even the usufruct?'

³⁹5 & 6 Vict., c. 108 (An Act for enabling Ecclesiastical Corporations, aggregate and sole, to grant leases for long-terms of years).

⁴⁰*Huntley v Russell* (1848), 18 L.J. (Q.B.) 239.

The gravel had been employed for two purposes. The bulk of it had been used by the surveyors of the highways for repair of public roads. The remainder had been sold by the incumbent for his own profit. Concerning this residue the judge had no option but to enter a verdict of £5 for the plaintiff. But, regarding the gravel used for the highways, he accepted the argument that the public necessity required the opening of the pits at the place in question. The mining was done in the execution of a public duty and was not to be considered as waste. As transport costs often form the bulk of the expense of gravel the sense of the judgement is clear even though its reasoning is obscure.

*Ross v Adcock*⁴¹ illustrates another way in which the judges mitigated the rule. Gravel mines had been opened and worked on the glebe lands, materials to the value of £160.8.6 having been extracted. But this was due to an error. By an enclosure award made in 1795 a piece of land had been allotted to the surveyors of the highways from which to get gravel for the repair of public roads. It adjoined the glebe and, through a mistake over boundaries, the surveyors had, over a period of more than 50 years, dug the gravel in question from the glebe. As the deceased rector, against whose administrator the succeeding incumbent brought the action, was unaware that the glebe was being mined it seemed inequitable that his estate should be charged with dilapidations. The difficulty was to find a way of avoiding the charge in view of the seemingly unambiguous decision in *Huntley v Russell*.

Recourse was had to the intricacies of procedure and the complications of the structure of the courts. The judge decided that, though he could not say that an action for dilapidations founded upon such facts must always fail, it would not lie in his court against this particular defendant.⁴²

Such ingenuity could bring but limited relief. While the major industry of the country was agriculture this sufficed, but the demand for minerals created by the industrial revolution made the

⁴¹op. cit.

⁴²*ibid.*, p. 668: 'The Bishop of Salisbury's Case has been cited to show that this action lies for cutting timber but that case refers to the jurisdiction of the Ecclesiastical court and shows that the offender may be punished there even to the extent of deprivation. And, though the reporter adds that the offender may be punished at common law yet the authority cited, Yearbook 2. Hen. 4 fo 3, so far from proving the position shows that at that time this action did not lie at all after the death of the incumbent. . . . In considering these questions it is to be borne in mind that the inquiry is not whether a rector can lawfully commit or suffer such waste as is here charged and proved, but only whether this action lies for that waste, at the suit of his successor, against the personal representatives of the deceased'.

restrictions onerous. The law was liberalised by two Acts: the Ecclesiastical Leasing Acts 1842 and 1858.⁴³ This legislation can be viewed as a relaxation of the doctrine of physical capital maintenance in a time of rapid economic change.

The Acts permitted mining leases of up to 60 years to be granted, subject to certain safeguards. The dangers at which the statutes of Elizabeth I had been aimed still remained. Hence the consent of the patron and the Ecclesiastical Commissioners (a body charged with the oversight of church financial affairs) was required before the lease could be granted. The Commissioners were under a duty to secure an independent valuation before they acquiesced in the lease.

The concept of a parochial ministry, locally financed, caused wide discrepancies between the incomes produced by different livings. Although strong centralising movements occurred in church affairs in the 19th century, the Church of England is still hallmarked by local administration and diversity. A minimum stipend is now guaranteed to all incumbents,⁴⁴ but there is no concept of a national salary scale, and incomes can be greatly affected by the incidence of local benefaction. However the relaxation of the rule of physical maintenance created income redistribution problems. The discrepancies that might arise from the random discovery of minerals under church land were unacceptable. Hence the Ecclesiastical Corporations Leasing Acts required the rents from the new leases to be paid to the Ecclesiastical Commissioners. They had to pay sufficient of the rent to the incumbent to make his annual stipend up to £300 if the population of the parish was less than 1,000; if it was between 1,000 and 2,000 the minimum salary was set at £500; and if it exceeded 3,000, at £600.⁴⁵ The Commissioners could use any surplus above these sums on the general cure of souls.

The glebe lands – leases

The Elizabethans, believing 'that long and unreasonable leases be the chiefest cause of the dilapidation and decay of all spiritual livings and hospitality'⁴⁶ forbade the leasing of the glebe for a period longer than 21 years (or three lives). The rent had to be fair and paid annually. Coupled with the prohibition against alienation, this restriction made church land unavailable for many types of development for nearly 300 years.

Here again, the fossilisation of an economic resource was tolerable to a largely agricultural economy. It ceased to be so when the large population changes of the industrial revolution created massive new demands for housing. On occasion glebe land was the most suitable location for a new housing estate if it could have been used for that purpose. Again the loss of potential income to the church, reinforced by the other arguments stemming from a sub-optimal use of resources, brought about reforms. The Ecclesiastical Leasing Acts 1842 and 1858 permitted building leases of 99 years⁴⁷ to be granted subject to the same consents required for mining leases. Development value, like the incidence of minerals, is of a windfall nature; so the same income redistribution mechanism was applied to it.

Conclusion

Some general conclusions can now be drawn concerning a policy of using the maintenance of physical capital as the benchmark of income measurement. The idea of continuity dominates many accounting practices.⁴⁸ The church in England epitomises continuity; it is our oldest national institution. Its experience of over a thousand years suggests that, if continuity is adopted as an objective, then a policy of physical capital maintenance does much to achieve it. But continuity is at odds with a dynamic economy that requires resources to move to activities that yield the greatest return.⁴⁹

Our study may have done something to illustrate this. We have discovered, in our exploration of the law of dilapidations, some of the difficulties of attaching a precise meaning to the idea of physical maintenance and how misguided it is to retain facilities initially provided at an inappropriate scale. The old rules relating to timber and mining have shown us that preserving some things *in specie* renders them financially worthless. When applied to consecrated ground and the leasing and mining of the glebe, they revealed some of the consequences of fossilising resources. As the industrial economy of Britain developed, these results became increasingly unacceptable and many statutory modifications were made to the common law to prevent them occurring. A policy of physical capital maintenance fits uneasily into modern life.

⁴³5 & 6 Vict., c. 108, s. 1.

⁴⁸See Statement of Standard Accounting Practice No. 2 (Disclosure of Accounting Policies) issued by the Institute of Chartered Accountants in England and Wales, November 1971.

⁴⁹Many of the arguments which are advanced against replacement cost accounting would seem to apply to any species of capital maintenance and hence to the notion of the continuance of the business entity.

⁴³5 & 6 Vict., c. 108; 21 & 22 Vict., c. 58.

⁴⁴Guy Mayfield, *op. cit.*, p. 85. For 1976/7 the minimum net stipend is £2,400 a year.

⁴⁵5 & 6 Vict., c. 108, s. 13.

⁴⁶13 Eliz., c. 10, s. 3.

Relationships between Timeliness in Corporate Reporting and Corporate Attributes

John K. Courtis

'Timeliness', one of the qualitative objectives of financial statements, requires that the publication of accounting information be as rapid as possible to assure the availability of current information in the hands of investors and other interested parties. A decade ago Professor E. Stamp wrote in the leading Wellington morning paper that it took Australian and New Zealand public companies approximately twice as long to report audited results as it took American companies.¹ Whereas American auditors' reports were available approximately 40 days after their clients' balance dates, New Zealand and Australian auditors took approximately 80 days. Although Stamp based his remarks on a small sample size, is there any reason to believe (in New Zealand at least) that public companies have become more punctual today in the release of audited accounting information?

The purpose of this article is to report the findings of three aspects of New Zealand corporate reporting: (i) the diversity of accounting balance dates in use; (ii) the interval of time between balance date and selected other dated events; and (iii) the relationship between the delay in releasing audited figures and corporate profitability, size and other attributes. Data used in the study were obtained from the 1974 annual reports of 204 listed New Zealand public companies. The sample was not selected randomly, but consists instead of all annual reports that were available to the writer, and represents approximately 80% of all listed New Zealand public companies.

Diversity of balance dates

Whereas one might have expected companies generally to coincide their balance dates with the end of the fiscal year (March 31), in fact only about 40% of the sample companies concluded their accounting period on that date. Table I summarises the fact that no less than 18 different balance dates are employed by this corporate group.

TABLE I
Accounting Period Balance Dates

Year End	Frequency of Companies	Percentage of Companies	Frequency of Companies per Quarter
19 January	1	0.5	
31 January	5	2.5	
28 February	4	2.0	
31 March	81	39.7	91
30 April	5	2.5	
31 May	7	3.4	
19 June	1	0.5	
30 June	39	19.1	52
19 July	4	2.0	
31 July	14	6.8	
31 August	6	2.9	
1 September	1	0.5	
30 September	8	3.9	33
1 October	4	2.0	
19 October	1	0.5	
31 October	9	4.4	
30 November	2	1.0	
31 December	12	5.8	28
Total = 18	204	100.0%	204

Although the majority of companies balance their books on March 31, subsidiaries or associates of Australian firms tend to adopt the June 30 balance date to keep in line with their Australian connections. The popularity of this date probably also stems from association with the dairying industry, whose season ends then. Firms with British connections tend to balance at the end of the calendar year. The 19th of the month is also a favourite balancing date with some firms, particularly in the retail and warehousing fields, presumably in deference to the monthly creditors 20th due date convention. Seasonal reasons also dictate an unusual date for some companies, such as the meat export trade. In this case the ideal date is between the end of one killing season and the start of the next. This would account for

¹E. Stamp, 'Accounts are produced Quicker in US', *The Dominion* (Wellington, New Zealand), April 5, 1966.

many companies opting for a September 30 or October 1 balance date. All in all every calendar month in the year is represented on at least one day. As one commerce editor facetiously noted: 'In commerce, as in romance, there is nothing too constant about a date.'²

The implications of this diversity for the investor are not clear, although it may be speculated that inter-company comparisons of operating results are hindered through not being able to identify the relative progress of firms over the same interval of time. Insofar as this acts as a restriction to the comparability of investment alternatives, the investor is constrained in the exercise of full rationality with respect to his allocation of investable resources. Whether in fact this diversity plays any rôle in distorting resource allocation is an intriguing research idea, but one which lies outside the scope of this study.

Lag profiles

In order to expand upon Stamp's observation of lack of punctuality in New Zealand reporting, five interval periods were calculated from dates supplied within the sampled annual reports:

A: interval of days between balance date and the date of the annual general meeting.

B: interval of days between balance date and the date of the auditor's report.

C: interval of days between the date of the auditor's report and the date of the annual general meeting.

D: interval of days between the date of the auditor's report and the date of notice of annual general meeting.

E: interval of days between the date of notice of the annual general meeting and the date the actual general meeting was held.

Lag A represents the total interval of time after balance date before the directors formally present financial results to the owners of the entity. Lags B and C subdivide A into two components: the interval of days it takes before audited accounting information becomes available for release (through the press), and the time it then takes management to organise all necessary activities to bring on the company's annual general meeting. Lags D and E subdivide C into the time it takes management, once the auditor's report appears, to advise the shareholder of the forthcoming annual general meeting, and the amount of time shareholders are given to attend the meeting or respond to the proxy document. These component lags provide the basis for analysing the overall profile of corporate reporting lags, the results of which are summarised in Table II.

TABLE II

Corporate Reporting Lags³

Specific Lags	Mean Interval in Days	Mean Interval in Weeks	Interval Range in Days	Companies Sampled ⁴
A	128	18	53 - 316	200
B	83	12	8 - 218	204
C	44	6	7 - 166	198
D	15	2	(26)* - 91	182
E	28	4	12 - 119	182

*There were 15 instances where notice of the annual general meeting preceded the date of the auditors' report.

To illustrate: A. B. Consolidated Holdings Ltd., one of the sampled companies, adopts a March 31 balance date. The annual general meeting was held on July 30 (1974), an A-lag of 121 days. The auditor's report was dated June 26, thereby revealing a B-lag of 87 days with a consequent C-lag of 34 days. The notice of the annual general meeting was July 10, while the meeting itself was held (as noted above) on July 30, producing a D-lag of 20 days and an E-lag of 14 days. These five types of lags were calculated for each company (insofar as annual report disclosure would allow) and averaged across the sample to provide yardstick figures.

The overall results of this investigation into lags indicate that the total interval of time between balance date and the date of the annual general meeting averages 128 days or 18 weeks, although the range of 53 to 316 days better conveys the extremes in punctuality. This means that New Zealand listed public companies take approximately 4½ months beyond their balance dates before they finally present the audited accounting information to the shareholders at the general meeting. Whether this complies with the objective of 'timeliness' in reporting is doubtful.

The mean total lag of 18 weeks (A-lag) consists (on average) of 12 weeks before auditors issue their report (B-lag) and an additional six weeks for corporate management to formally present the results at the general meeting (C-lag). This six weeks in turn

³Frequency distributions of the occurrence of corporations falling within specific lag periods are presented in Appendix A.

⁴Lags were obtained from the same set of 204 annual reports used in Table I. However some date omissions occur, particularly with respect to the notice given by management of the company's annual general meeting. Four annual reports omitted to mention the date of the annual general meeting.

²'Knowing Where to Draw the Line, and When', *The Evening Post* (Wellington, NZ), 27 September, 1975, p. 19.

consists (on average) of two weeks for management to give notice of the meeting (D-lag), and another four weeks before the meeting is held (E-lag). Since this profile is based on average results for each lag-type, the reader is cautioned not to infer that all companies follow this rigid pattern. The 'best' company overall, i.e. Aurora Group Ltd. with the shortest A-lag of only 53 days (being the difference between October 31 and December 23) has a B-lag of 33 days, and a D-lag of 18 days. In general, it does seem that the specific lag which can be attributed to the greatest overall proportion of the A-lag is that of B, and it is this lag which is further analysed in the paper.

An obvious question which arises out of a consideration of this profile of lags is which party should criticism be levelled at: corporate management or the auditors? It must be asked whether New Zealand auditors need (on average) a period of approximately three months in which to satisfy themselves that corporate accounts give a true and fair view of affairs.

Without intimate knowledge of the specific day-to-day procedures and interactions of auditors and their clients one can only speculate as to which group is primarily responsible for the lag. In the US, where clients are 'organised' by their auditors to have their accounts and specified other documentation ready at the time of audit, the audit process is conducted efficiently and with minimum disruption. This is necessarily the case in order to keep the amount of the audit bill within reasonable bounds. In New Zealand, on the other hand, it would be easy to argue that the same impetus for sophistication does not exist, and that both parties appear to be more lackadaisical than their US counterparts.

When this writer suggested to a group of Wellington auditors that auditors might be primarily responsible for the lack of punctuality in releasing audited corporate results, three reasons were offered why they as a group should not, in general, be held to blame.

First, it was contended that some companies do not keep their accounting records up-to-date, and that because of this the auditor is unable to commence meaningful audit review for some weeks after balance date. In these cases the company's inability to promptly prepare a set of accounts for the auditors is the primary cause of the reporting (B-type) lag. One auditor elaborated that some companies located in non-city areas find it difficult to attract and retain competent office staff. These companies claim that they find it cheaper (?) and more convenient to employ the auditor to bring the records up-to-date rather than be concerned with trying to overcome the problem of obtaining and holding suitable office

personnel. The extent to which this may account for B-lags is not known, but it is suspected from this writer's awareness of the head-office locations of New Zealand public companies that few firms in the present sample would honestly fit this explanation.

Second, it was stated that in some cases the auditors' report is post-dated to coincide with the release of the printed annual report. Although this would not affect the total (A) lag time, its occurrence would distort the accuracy of lag B calculations. Where it exists, the B-lag would be shorter for that particular company. Although this seems to be a reasonable contention, it should be noted that in New Zealand there are more different public accounting firms engaged in auditing public companies than probably anywhere else in the world. The sample of 204 companies is audited by 58 different audit firms. One doubts whether the practice of post-dating audit reports would extend across the profession.

Third, it is claimed by auditors, lawyers, accountants, sharebrokers, directors and managers that at the present time in New Zealand there are chronic inefficiencies in the printing industry and that as a result of this the annual report takes longer to print than it should. However, even admitting that this is true and that part of the total reporting lag is due to an uncontrollable third party – namely, the printer – one cannot help but wonder why this explanation should necessarily mitigate the allegation that auditors take excessive time to perform their audits.

On the other side of the picture it could be suggested that companies themselves are chiefly responsible for B-lags. It was intimated by a director of a large public corporation that big companies are normally more complex in structure and simply take longer to audit. Moreover, where losses (or inferior results) have occurred, certain delays must be expected while divisional managers 'explain' their results. A lawyer also alleged that companies with poor performance often held back from releasing their audited figures for as long as possible so that these companies could continue any local or overseas (finance and trade) negotiations in the best possible light. He also added the proviso, however, that some new companies with anticipated poor results released these promptly so as to confirm the shareholders' expectation.

In New Zealand the possibility (at this time) of delving more deeply into such delicate matters does not seem to be politic. Fortunately, however, there is a more intriguing question which can be researched, namely, the type of relationship which exists between the interval of time between balance date and date of auditors' report (i.e. B-lags) and such corporate attributes as profitability, size and age. Specifically, is the more profitable company associated with a

short B-lag (therefore, by inference, taking less time to audit), and conversely, is the less profitable (and loss producing) company associated with a long B-lag (i.e. taking more time to audit)? These and related issues are taken up below.

Profitability and B-lag relationship

B-lags computed for each of the 204 companies ranged from eight days to 218 days. The graph of these lags illustrated in diagram I indicates a bimodal distribution with a median of 81 days. The first quartile represents 51 companies with a range of eight to 61 days. These companies are for convenience called prompt or fast reporters of audited accounting information. The fourth quartile represents a further 51 companies with a range of 99 to 218 days. Similarly for convenience these companies are referred to as slow reporters. Whereas the first quartile group represents companies that took no more than two months from balance date to report their audited results, the fourth quartile group took upwards of three months, the worst company taking approximately eight months. Fifty percent of the companies sampled, namely quartiles two and three, indicated B-lags between 61 and 99 days. In other words half of New Zealand's listed public companies report their audited results during the third month following balance date. One-quarter report more promptly than this and one-quarter are more tardy. The question is whether the fast reporters display corporate characteristics (of which profitability is but one) which are different to those of the slow reporters.

In order to avoid the assumptions associated with parametric testing the non-parametric Mann-Whitney U test was used to determine whether the fast and slow reporters differed with statistical significance on a number of issues.

The hypothesis tested is that:

'The profitability of quartile one companies (taken as a group) is statistically significantly larger than the profitability of quartile four companies (taken as a group).'

Since no single profitability measure meets with unanimous acceptance five profitability ratios were examined in turn. The 'du Pont' system of financial ratio analysis was selected to identify three of the more important ratios, namely:

$$\begin{aligned} & \frac{\text{Net Income}}{\text{Sales}} \quad (\text{Profit Margin}) \quad \times \\ & \frac{\text{Sales}}{\text{Total Assets}} \quad (\text{Asset Turnover}) \quad = \\ & \frac{\text{NI}}{\text{TA}} \quad (\text{Return on Investment}) \end{aligned}$$

Values for these three ratios were calculated for each of the companies in the first and fourth quartiles. To illustrate, for the net income/total assets measure, the 102 values were arrayed from least profitable to most profitable. Each of these values was identified by the quartile location of its related company, and quartile one companies were assigned their appropriate rank numbers in the array. These were then aggregated to determine a value of R_A which was in turn applied to the Mann-Whitney statistic to compute the Z score.⁵ The following formulae were employed:

$$U = N_A N_B + \frac{N_A (N_A + 1)}{2} - R_A \quad (i)$$

$$\mu_U = \frac{N_A N_B}{2} \quad (ii)$$

$$\sigma_U = \sqrt{\frac{N_A N_B (N_A + N_B + 1)}{12}} \quad (iii)$$

$$Z = \frac{U - \mu_U}{\sigma_U} \quad (iv)$$

where N_A and N_B represent the sample size of quartiles 1 and 4 respectively. For net income to total assets the Z value of -3.122 is significant with an alpha of .05 and a critical value of -1.96, thereby indicating that the return on total assets of the fast reporters is statistically significantly greater than that of the slow reporters.⁶

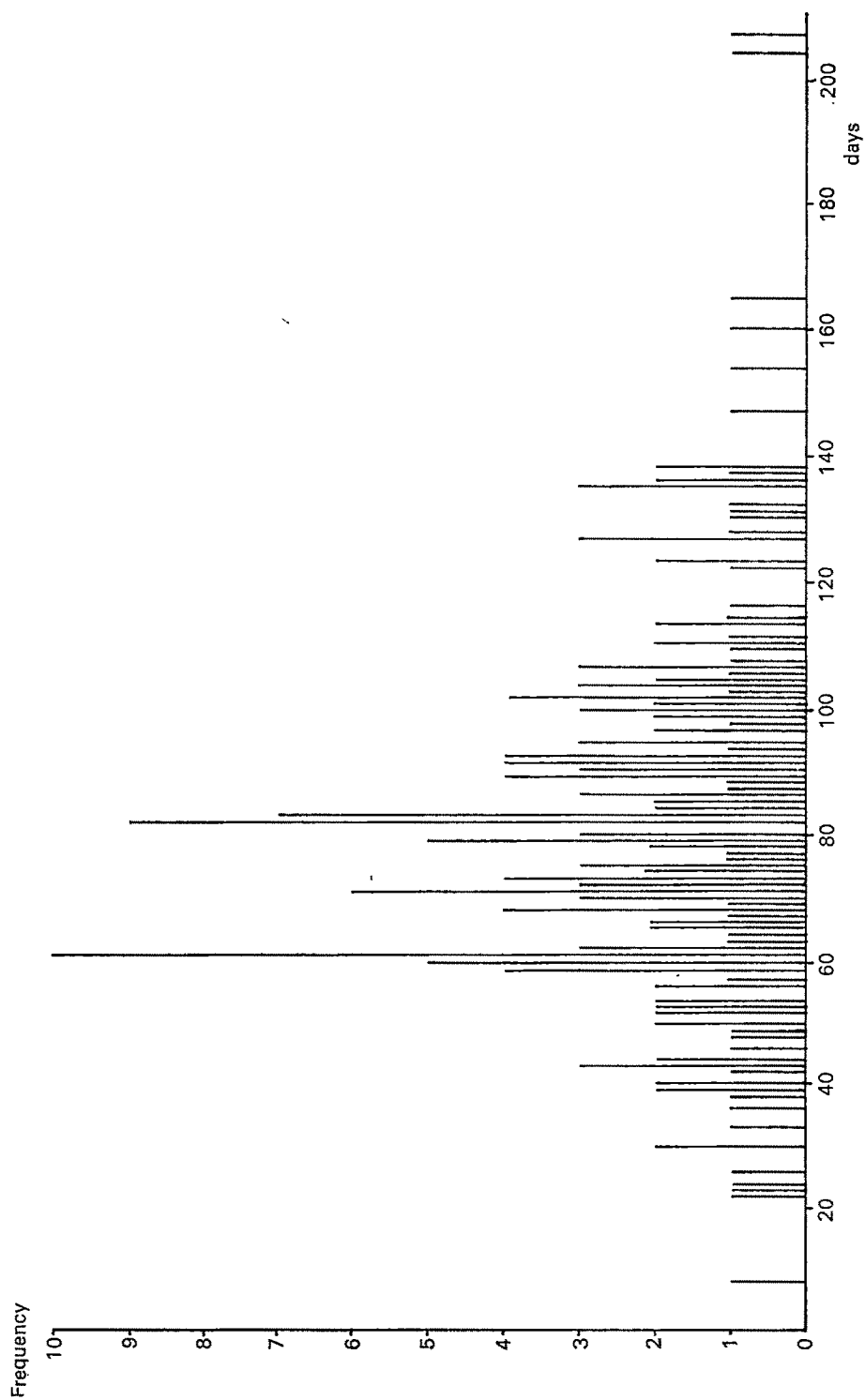
Similarly, significant results were obtained for the other two components of the du Pont profitability triangle. The net income to sales ratio produced a Z score of -3.81 and the sales to total assets ratio (asset turnover) produced 2.21. Because the New Zealand Companies Act 1955 does not require that the sales revenue figure be disclosed in corporate annual reports, only 49 percent of the sample were found to have included this figure. It was fortuitous that 23 companies in quartile one and another 23 companies in quartile four revealed their sales revenue figures, thereby enabling calculation of these two profitability measures. The conclusions that can be derived from these two results is that the profit margin obtained by fast reporters is statistically significantly greater than that obtained by slow reporters. The asset turnover result is lower for fast reporters than for slow reporters, thereby hinting that slow reporters are overtrading or undercapitalised.

It would be tempting to infer from these results

⁵For a full description of the Mann-Whitney U test see Sidney Siegel, *Nonparametric Statistics for the Behavioral Sciences* (McGraw-Hill, New York, 1956), pp. 116-126.

⁶A graph of the distribution of return on total assets across B-lags for the sampled corporations appears in appendix B.

DIAGRAM 1 DISTRIBUTION OF B-LAGS



alone that fast reporters are significantly more profitable than slow reporters. Such, however, may not be an accurate interpretation, for when the Mann-Whitney U test was applied to two other profitability ratio measures, non-significant Z scores were obtained. Net income to total capitalisation and net income to net worth produced Z scores of -1.44 and -1.67 respectively. These results imply that the return on owners' equity and the return on owners' equity plus long-term debt are not significantly different between fast and slow reporters.

Absolute profit was also tested via the Mann-Whitney test and with a Z score of -2.39 was found to be significant. This indicates that the mean of the absolute profit figures for the fast reporters is statistically significantly greater than the mean of the absolute profit figures for the slow reporters. On closer inspection of the profit figures two further observations can be made.⁷ While eight companies in quartile four showed actual losses there were no companies in quartile one with loss results; and second, the five most profitable companies are all from quartile one.

The overall conclusion suggested by this confounding evidence is that there is a tentative inverse relationship between profitability and B-lags, although to some extent it depends upon which profitability measure is being considered. Further research on this specific area needs to be conducted before the hypothesis can be accepted or rejected without qualification.

Corporate attributes and B-lag relationships

Four attributes were related to quartile one and quartile four B-lags in an effort to determine whether fast reporters and slow reporters demonstrated further differentiating characteristics. The identification of 'corporate personalities' for each of these two groups lies outside the scope of this research, and in any event, this investigation has employed information disclosed within annual reports as the source of data.

The four attributes investigated were: (i) corporate size, as defined by book value of total assets, the dollar value of sales revenue, and number of employees; (ii) age, as defined by the number of annual general meetings held by the entity as a public company; (iii) number of shareholders; and (iv) the pagination length of the annual report.

The size attribute showed itself to be non-significant

under all three definitions, thereby indicating that book value of total assets, dollar sales, and the number of employees for companies falling within the first B-lag quartile are not statistically significantly different to those for companies falling within the fourth quartile. In other words, fast reporters and slow reporters do not appear to differ with respect to those particular size attributes defined above. The three Z values obtained from application of the Mann-Whitney test were: -1.59 , $.19$ and 1.85 respectively.

Since corporate size was not found to be an explanatory variable of relative B-lag size it must be assumed that audit firms satisfactorily accommodate themselves to the size of their clients. It would be naïve to argue that large audit firms audit large companies and that small audit firms audit small companies. In New Zealand, with so many different audit firms, the more realistic interpretation seems to be that several of these public accounting practices have only one large listed public company client, and that, further, some audit firms have grown in step with their clients over the years.

The age attribute also indicated lack of statistical significance. The Z value of -1.62 indicates that the average ages of fast reporters and slow reporters are not dissimilar.

Number of shareholders was also found to be statistically insignificant, as one might have expected. This means that the size of the share register is most probably not a determining factor in the length of the B-lag.

The final attribute considered was length of annual report. It seemed plausible to investigate whether fast reporters produce shorter annual reports than slow reporters. No statistical significance was found. Out of all 12 tests the Z value of $-.43$ is the second closest to zero. Fast reporters and slow reporters are almost identical with respect to pagination length of annual report. Moreover, they are identical in mean length (of 20 pages) to companies falling within both quartiles two and three. In other words the length of the annual report seems to have no bearing on the time it takes to release audited accounting information.

A summary of the results discussed above from each application of the Mann-Whitney test is provided in Table III. In each case an alpha of $.05$ was adopted with a corresponding critical value for significance of ± 1.96 .

The sort of profile which is suggested from all of the above results is simply that those companies which tend to be tardy in the release of their audited accounting information are those which are more likely to have experienced inferior operating results. More bluntly, the message which seems to emerge

⁷A graph of the distribution of absolute profit across B-lags appears in appendix C.

TABLE III

Summary of Mann-Whitney U test results

Measure	N_A	N_B	R_A	U	μ_u	σ_u	Z
Net income to total assets	51	51	3093	834	1300.5	149.42	-3.12 *
Net income to sales	23	23	714	91	264.5	45.52	-3.81 *
Sales to total assets	23	23	440	365	264.5	45.52	2.21 *
Absolute \$ profit	51	51	2984	1122	1300.5	149.42	-2.39 *
Net income to total capitalisation	51	51	2841	1086	1300.5	149.42	-1.44
Net income to net worth	51	51	2877	1050	1300.5	149.42	-1.67
Book value of total assets	51	51	2865	1062	1300.5	149.42	-1.59
Sales revenue	23	23	549	256	264.5	45.52	.19
Number of employees	9	7	49	14	31.5	9.75	1.85
Age of company	43	41	2009	700	881.5	111.75	-1.62
Number of shareholders	13	17	176	136	110.5	23.89	1.07
Annual report length	50	51	2588	1212	1275	147.22	-0.43

TABLE IV

After-Tax Profits per B-Lag Quartile

	1	2	3	4
Total Net Income	\$69,779,409	\$57,232,242	\$43,575,642	\$27,532,293
Av. Net Income per Company	\$1,368,224	\$1,079,854	\$854,424	\$539,849
Standard Deviation	\$2,763,005	\$2,252,322	\$1,802,365	\$845,325
Coefficient of Variation	2.02	2.09	2.11	1.57
Number of Companies with Losses	0	2	2	8
Range of Net Incomes	\$17,871,020 \$36,083	\$9,146,000 (\$2,343,000)	\$10,256,000 (\$2,323,000)	\$4,356,000 (\$294,944)

is that if a New Zealand public company should withhold the release of its audited accounting figures for more than three months beyond balance date, the likelihood is that that company experienced either an operating loss or a lower profit than those companies which released audited results within the first three months. Table IV identifies a profile of after-tax profits per quartile of companies.

The trend seems quite clear. The total net profits of the fast reporters are approximately \$70m, falling slightly to \$57m for quartile two companies, dropping further to \$43m in quartile three, and falling away sharply for the tardy reporters to \$27m. Average net income per company per quartile shows the same trend.

Industry groups and B-lags

Industry classifications are often not very convincing because of the difficulties associated with the allocation of companies with diversified interests. The Challenge Finance Investment Year Book⁸ contains an up-to-date classification and this was selected to

demonstrate how B-lags are distributed across New Zealand industries. This is presented in Table V along with the mean B-lag per industry, the standard deviation of these B-lags and the associated coefficient of variation.

Of the 16 classifications only three industries appear to show average B-lag results which fall outside the second and third quartile ranges. 'Fuel and Energy' with a mean B-lag of 38.5 days appears to represent the most prompt reporting group. 'Service Industries' with a mean of 100.7 days is one group of slow reporters, while 'Mining and Exploration' is clearly the most tardy industry in releasing audited results with a mean of 160.5 days. This group is (in New Zealand) the most unprofitable of the 16 classifications as it is essentially comprised of companies which are engaged in (at present) non-revenue producing activities.⁹

Average figures, however, often cloud an accurate interpretation. Table VI provides some additional information by identifying the distribution of B-lags by industries across quartile one and quartile four.

⁸Investment Year Book 1975: A Survey of Public Companies Listed on the New Zealand Stock Exchange, (Challenge Finance Ltd, Wellington, NZ, 1975) pp. 5-13.

⁹The relative profitability of industries (as per the sampled corporations) appears as a table in appendix D.

TABLE VI
Distribution of B-Lags across Quartiles 1 and 4

	<i>Frequency of Companies</i>	
	<i>Quartile 1</i>	<i>Quartile 4</i>
1. Automotive	4	4
2. Finance, Investment, Insurance	11	3
3. Building and Construction	5	6
4. Chemicals, Paper and Rubber	4	0
5. Communications	4	2
6. Electrical	2	1
7. Television Rental	0	0
8. Engineering and Capital Equipment	3	4
9. Food, Drink, Tobacco	4	4
10. Fuel and Energy	4	0
11. Pastoral	3	7
12. Printing, Publishing, Packaging	3	4
13. Retail	1	1
14. Service Industries	0	10
15. Textiles, Clothing	3	2
16. Mining and Exploration	0	3
	<hr/> 51	<hr/> 51

The obvious discrepancies with respect to lack of symmetry or balance in profiles between the two quartile groups lies in the 'Finance, Investment, Insurance' classification and in the 'Service Industries'. Finance-type companies tend to be prompt reporters of audited information, perhaps because they are not engaged in the annual time-consuming task of counting inventory. By contrast Service-type industries are systematically tardy. Seven sub-categories are included in this classification and all are represented by at least one slow reporter: accommodation, catering, cleaning contractors, dry cleaning and laundry, scientific and surgical equipment, transport, and tourism.

Conclusions

Although this study has not pretended to represent an exhaustive treatment of corporate reporting lags and corporate attributes, it is contended that some of the more important aspects have been covered, at least insofar as the scope of information disclosed within annual reports allows. Further research could consider the relationship between B-lags and other features such as the number of subsidiaries within an

TABLE V
Distribution of B-Lags across Industry Classifications

<i>Industry Classification</i>	<i>Number of Public Listed Companies</i>	<i>Sample Size</i>	<i>Coefficient of Variation</i>	<i>Standard Deviation</i>	<i>Mean Days per Industry</i>
1. Automotive	15	13	.51	42.4	83.3
2. Finance, Investment, Insurance	30	17	.51	31.8	62.4
3. Building and Construction	37	29	.36	30.3	83.1
4. Chemicals, Paper, Rubber	9	8	.31	19.6	62.5
5. Communications	11	7	.51	38.4	75.3
6. Electrical	15	12	.36	31.0	85.3
7. Television Rental	2	1			68.0
8. Engineering and Capital Equipment	18	16	.28	24.4	86.2
9. Food, Drink, Tobacco	20	17	.24	21.0	86.2
10. Fuel and Energy	5	4	.32	12.3	38.5
11. Pastoral	23	19	.36	32.1	89.3
12. Printing, Publishing, Packaging	11	8	.29	26.0	89.3
13. Retail	17	12	.17	12.5	73.9
14. Service Industries	24	20	.27	26.7	100.7
15. Textiles, Clothing	19	17	.25	19.2	77.8
16. Mining and Exploration	8	4	.41	66.0	160.5
	<hr/> 264	<hr/> 204	<hr/> .39	<hr/> 32.3	<hr/> 82.6

entity, dividend policy, and the range and value of current assets. Whether or not the B-lag of each company is stable over time also needs to be investigated. However, from the results of this study a number of conclusions can be stated:

1. There appears to be an unusually high diversity of New Zealand corporate balance dates. It is suggested that this could affect inter-company comparability and thereby distort investor resource allocation.

2. The average interval of time between balance date and date of annual general meeting is 18 weeks, 12 of which purport to be absorbed by the audit process of corporate accounts. This may be considered practically unavoidable yet may still be

regarded as unsatisfactory as regards 'timeliness' as a qualitative objective of financial statements.

3. Fast reporters and slow reporters of audited financial information seem to differ with statistical significance with respect to profitability, at least insofar as profitability is considered at the absolute level and by the 'du Pont' measures. Slow reporters tend to be less profitable as a group than fast reporters.

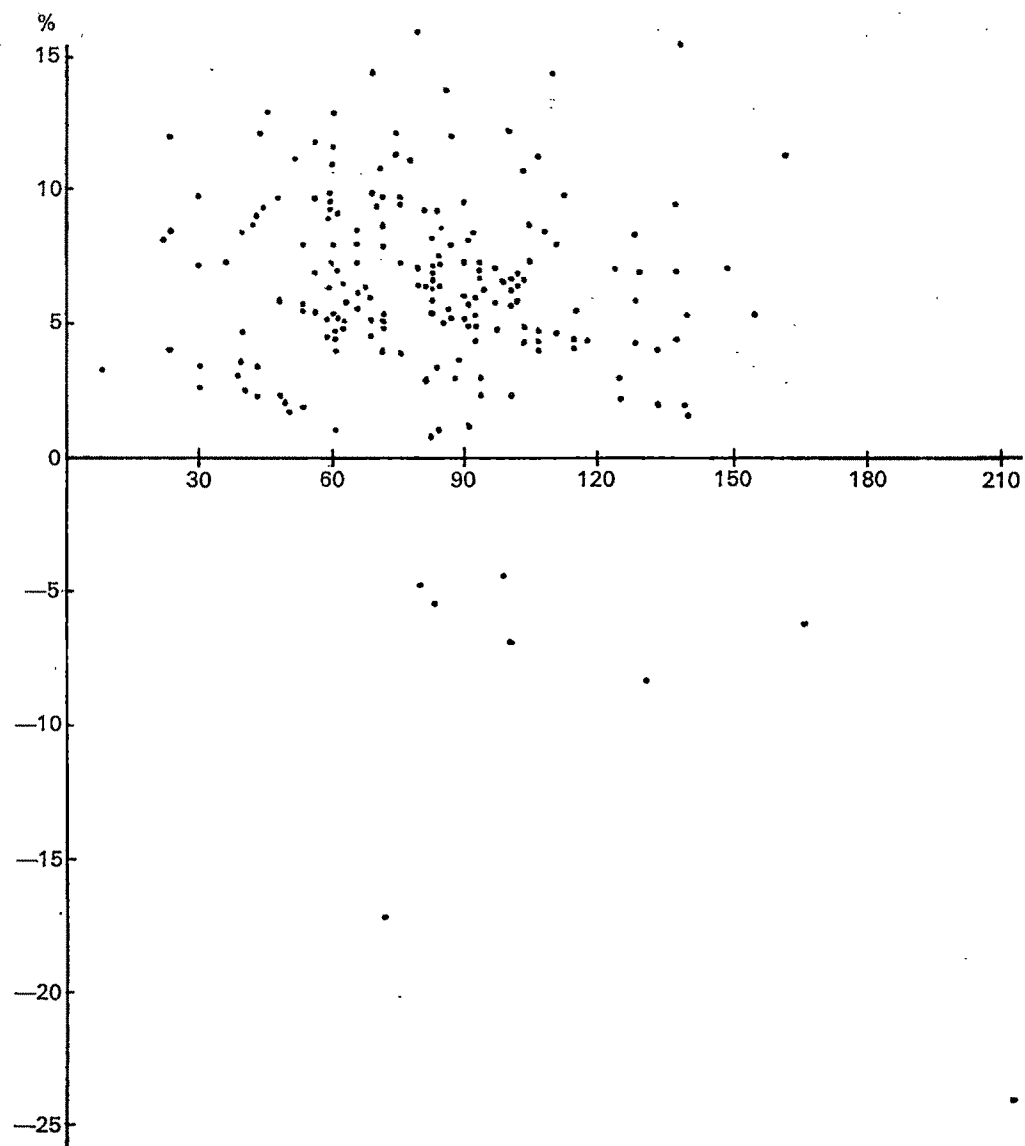
4. Fuel and Energy and Finance-type companies tend to be fast reporters as specific groups while Service Industries and Mining and Exploration companies tend to be slow reporters as specific groups.

APPENDIX A

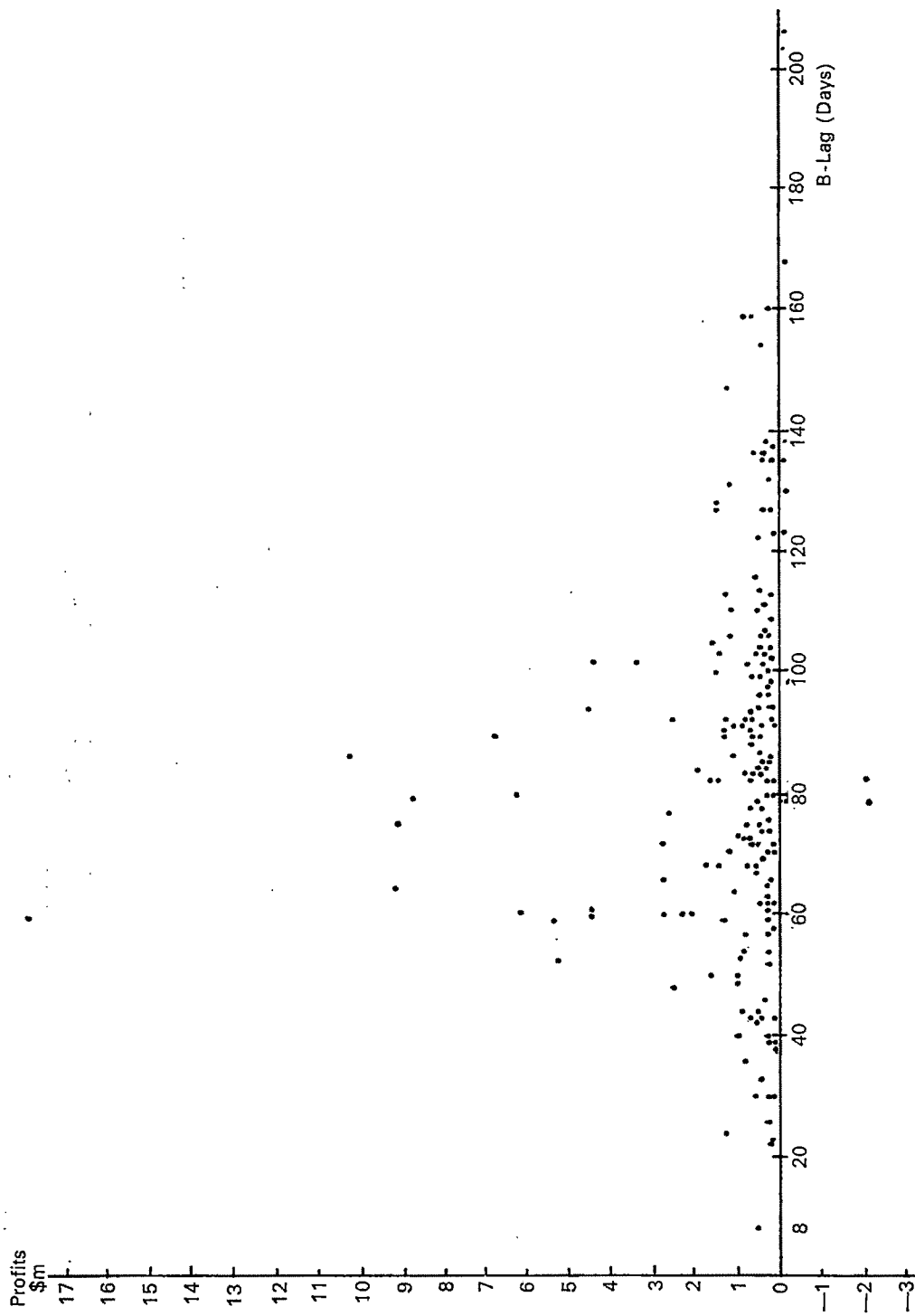
Frequency Distributions of Corporate Reporting Lags

<i>Weeks</i>	<i>A-Lag</i>	<i>B-Lag</i>	<i>C-Lag</i>	<i>D-Lag</i>	<i>E-Lag</i>
30+	6	3			
29	1	0			
28	1	0			
27	0	0			
26	3	0			
25	8	0			
24	5	1			
23	7	1			
22	13	1			
21	12	1			
20	14	8			
19	21	7			
18	24	3	1		
17	24	4	1		
16	17	8	1		
15	14	16	3		
14	13	13	2		
13	4	18	1	1	
12	6	28	5	1	
11	2	20	2	1	1
10	5	14	12	1	5
9		26	14	3	5
8		8	16	0	6
7		8	28	6	9
6		7	30	9	9
5		3	40	11	23
4		5	27	22	47
3		0	13	23	76
2		1	1	30	1
1			1	22	
0				37	
-1				11	
-2				2	
-3				0	
-4				2	
TOTALS (Companies)	200	204	198	182	182
MEANS (Weeks)	18.2	11.8	6.3	2.1	4.0
MEDIANS (Weeks)	18	12	6	2	4
MODES (Weeks)	17-18	12	5	0	4
RANGES (Days)	53-243	8-218	7-166	(26)-91	12-119

APPENDIX B RETURN ON TOTAL ASSETS



APPENDIX C DISTRIBUTION OF TAX-PAID PROFITS



APPENDIX D
Distribution of Tax-Paid Profits and Return on Total Assets across Industry Classifications

<i>Industry Classification</i>	<i>Sample Size</i>	<i>Total Tax-Paid Profits</i>	<i>Average Profits (per Company)</i>	<i>Industry Ranking *</i>	<i>Book Value of Total Assets</i>	<i>Weighted Average Return on Total Assets (per Company) %</i>	<i>Industry Ranking *</i>
1. Automotive	13	7,508,839	577,603	9	155,876,037	4.82	12
2. Finance Investment, Insurance	17	13,616,264	800,957	8	563,730,719	2.39	15
3. Building and Construction	29	39,471,968	1,361,102	3	585,743,168	7.12	3
4. Chemicals, Paper, Rubber	8	30,383,820	3,797,977	1	446,273,395	6.83	7
5. Communications	7	3,659,834	522,833	12	30,569,533	11.98	1
6. Electrical	12	4,942,853	411,904	14	78,356,702	7.08	4
7. Television Rental	1	565,273	565,273	10	6,676,565	4.90	11
8. Engineering and Capital Equipment	16	7,385,909	461,613	13	120,196,782	6.00	8
9. Food, Drink, Tobacco	17	25,812,950	1,518,409	2	470,240,823	5.04	10
10. Fuel and Energy	4	1,528,654	382,164	15	37,811,642	4.05	13
11. Pastoral	19	19,986,126	1,051,901	6	565,522,391	3.52	14
12. Printing, Publishing, Packaging	8	9,474,679	1,184,339	4	134,731,045	7.06	5
13. Retail	12	10,012,531	834,378	7	144,132,270	6.95	6
14. Service Industries	20	1,0806,169	540,308	11	194,838,429	5.54	9
15. Textiles, Clothing	17	18,139,925	1,067,054	5	224,457,677	7.30	2
16. Mining and Exploration	4	(295,975)	(73,994)	16	8,277,917	-3.58	16
	204	184,999,819	906,862		3,767,434,926	5.34	

*The Spearman rank correlation coefficient of .28 is not significant at an alpha of .05.
Average absolute net incomes and weighted average returns on total assets produce significantly dissimilar rankings.

Mergers and the Institutional Environment in the United Kingdom 1960-1970

I. C. Stewart

I Introduction

The influences making for mergers can be approached from two angles: environmental and motivational. In this paper, these influences are approached from the viewpoint of the institutional environment. These institutional influences may also be divided into two parts: primary and secondary. Government merger policy is the primary influence. Tariff policies, tax structure or accounting practices, which are not directly related to merger activity, but may, nevertheless, have an influence upon it, constitute the secondary influences. Conversely, merger activity may have an influence on the institutional environment; for example, a predominance of horizontal mergers (mergers between competing companies) may lead to more stringent merger laws. The purpose of this paper is to describe the extent and characteristics of UK merger activity during the period 1960-70, aspects of the institutional environment influencing these merger characteristics, and the interaction between these merger characteristics and the institutional environment.

II Merger characteristics

Six merger characteristics are described in this section; they are: frequency of take-overs, industrial distribution, type of integration, method of payment, geographic pattern, and the number of companies acquired by acquiring companies.

A. The Frequency of Take-overs

In the post-war period the Department of Trade and Industry (DTI) has compiled data on the numbers and values of companies acquired since 1954. In the period 1954 to 1972 over 11,000 mergers have been recorded in statistics published by the DTI. About 1,100 involved quoted public companies and the remainder either unquoted or quoted private companies. N. A. H. Stacey observes that private company acquisitions have declined substantially since 1965, while those of public companies have grown, both absolutely and in relation to private

company mergers.¹ The total consideration over the same period is not far short of £10,000m.² These figures considerably understate the actual position, as G. D. Newbould has pointed out in his book *Management and Merger Activity*.³ However, there is no conflict between the magnitudes, in terms of values and numbers, of the DTI data and that documented by Newbould for 1967 to 1968. Both sets of data point to the emergence of an unprecedented merger boom. It is clear that a new level of merger activity has been achieved and maintained after 1967-68. The size of the considerations paid in mergers has doubled from roughly £500,000 in 1960-66 to over £1m in 1967-70.

TABLE 1
Mergers in the United Kingdom: 1960-1970

Year	DTI ⁴		Newbould ⁵	
	No.	£m	No.	£m
1960	736	338.4		
1961	632	367.6		
1962	636	358.0		
1963	885	332.0		
1964	939	502.0		
1965	1,000	517.0		
1966	807	500.0		
1967	763	822.0	1,068	1,648
1968	946	1,946.0	1,433	3,560
1969	907	935.0		
1970	793	1,122.0		

Footnotes 4 and 5 explain the reason for the difference in these two series.

¹N. A. H. Stacey, *Mergers in Modern Business*, (second ed., revised, London: Hutchinson & Co., 1970), 16.

²Figures quoted by R. W. Moon, 'Twenty Years of Take-overs', *Accountant* (1972) 20 April, 503.

³G. D. Newbould, *Management and Merger Activity*, (Liverpool: Guthstead, 1970), 18-24.

⁴Figures for 1960 to 1964 quoted in Stacey, op. cit., Table II, 15. Figures for 1965 to 1970 quoted in Moon, 'Twenty Years of Take-overs', op. cit., 503. Note DTI exclude take-overs by those whose main interests were in agriculture, banking, finance, insurance, property, shipping and overseas up to 1969, when the basis was revised.

⁵G. D. Newbould, op. cit., 17. Data are drawn from analysis of daily financial press, and cover all industries.

Table 1 shows that, according to Newbould's figures, the total purchase prices paid in UK mergers was some £5,200m in 1967-68. A. Vice notes that this figure is equivalent to two-thirds of all capital investment by the private sector in those years and to very nearly twice the amount of capital investment carried out by manufacturing industry alone.⁶ More than 70 of the UK's top 100 companies entered the bidding, or were bid for,⁷ and more than a quarter of the companies registered at the beginning of 1967 with a value of £10m or more were taken over.⁸

B. The Industrial Distribution of Mergers

Merger activity has been concentrated in a restricted number of industries. The staff of the Monopolies Commission in their *Survey of Mergers 1958-68*⁹ found that five industries accounted for 75% of the net assets absorbed. Using only 9% or 17 of the minimum list headings in the *Standard Industry Classification*, Newbould was able to account for 71% of the total value of all mergers during 1967-68.¹⁰ D. Kuehn's analysis of merger activity for the period 1957-69 indicates that five major industries experienced particularly heavy merger activity: food, breweries and distilleries, engineering, textiles and building. Take-overs in these broad industry classes accounted for nearly two-thirds of all take-overs in the period. Kuehn found striking differences between these industries with respect to the timing of the waves of take-overs. In both the breweries and distilleries and food industries the highest proportion of raids occurred during the 1958-60 minor take-over boom, whereas with the others the highest proportions occurred during the more recent boom, the 1958-60 wave hardly being apparent at all.¹¹

C. The Type of Integration in Mergers

Newbould found that during 1967/78 over 80% of mergers were horizontal (by numbers or value).¹² Professor Rose summed up this period by suggesting that the main reasons why a company wished to take over another in the same industry were market dominance and defence of market or industrial positions.¹³ These reasons accounted for nearly half

of the aggregate reasoning for the mergers in Newbould's survey.

This suggests some material changes in industrial concentration as a result of merger activity; conditions which may be regarded as having an adverse effect on the industrial structure of the UK economy. Some indication of this can be gained from Kuehn's analysis. He found that when measuring merger activity relative to the number of companies in the industry, seven industries lost over 50% of their members while nine industries lost under 30%.¹⁴ To provide evidence of the growing control of the largest companies in industrial classifications, the Monopolies Commission showed the number of companies which together owned more than 50% of the net assets in their classification in 1957 and 1968. Marked reductions are apparent in food, drink, vehicles, textiles, paper, printing and publishing.¹⁵

Figures quoted by Stacey¹⁶ suggest that horizontal mergers were not as important in 1969 as Newbould had observed in 1967-68. Quoting the *Board of Trade Journal*, Stacey notes that in 1968 horizontal mergers accounted for 54.4% of the numbers, and 66% of the value of mergers. In 1969, the figures were 54.3% for numbers and 40.1% for values.

D. Method of Payment

According to Lord Shawcross, Chairman of the Panel on Take-overs and Mergers, during recent years the proportion of 'paper' as against cash offers has increased. In 1964, cash formed more than half the consideration in take-over bids; by 1970 the cash proportion had fallen to 23%.¹⁷ Kuehn notes that the cash offer has suffered at the expense of loan stock; in particular, convertible unsecured loan stock was frequently chosen during 1966-69 while previously it was virtually unknown.¹⁸

This trend is also clear from information documented by the Monopolies Commission on merger finance in the period 1964-68. Although the figures for ordinary shares represent nominal values, the proportion of mergers financed by paper (ordinary shares and long-term loans) increased from 40% in 1964 to 82% in 1968.¹⁹ The Commission also found that in the 13 largest mergers, the finance consisted

⁶A. Vice, *The Strategy of Take-overs*, (London: McGraw-Hill, 1971), xi.

⁷G. D. Newbould, op. cit., 17.

⁸ibid., 32.

⁹Monopolies Commission Staff Paper, *A Survey of Mergers 1958-1968*, (London: HMSO, 1970), 9-10.

¹⁰G. D. Newbould, op. cit., 35-36.

¹¹D. Kuehn, *Take-overs and the Theory of the Firm*, (London: Macmillan, 1975), 19f.

¹²ibid., 33.

¹³Foreword to A. Vice, op. cit., xv.

¹⁴D. Kuehn, op. cit., 16.

¹⁵*A Survey of Mergers 1958-1968*, op. cit., 38, Appendix 10.

¹⁶N. A. H. Stacey, op. cit., 37.

¹⁷Lord Shawcross, *Report of the Panel on Take-overs and Mergers*, for year ended 31 March 1971 (1971), 3.

¹⁸D. Kuehn, op. cit., 33-34.

¹⁹*A Survey of Mergers 1958-1968*, op. cit., 13; see also: *Monopolies Commission General Observations on Mergers*, Board of Trade Guide, (London: HMSO, 1969), 47.

entirely of paper (largely ordinary shares) except in the case of American Tobacco's take-over of Gallaher.²⁰

E. The Geographic Pattern of Merger Activity

Based on evidence given by G. D. Newbould and A. S. Jackson,²¹ international mergers involving the take-over of a UK company were not on a significant scale. Of the 481 potential mergers during 1967-68 involving a consideration in excess of £1m, only 27 situations involved an overseas bidding company. The amount offered for these companies was under £250m. The Monopolies Commission observed that of the largest foreign-owned manufacturing companies operating in the UK, only three acquired UK owned companies in the 11 years to 1968. The Commission observed that UK-based, foreign-owned companies seem generally to have concerned themselves with expansion from within; they appear to have concentrated particularly in motor vehicles and tyres, petroleum, electronic products (of which office equipment forms an important part), agricultural machinery and pharmaceuticals industries.²²

Two of the largest foreign take-overs during the sixties were by American Tobacco (US) of Gallaher, and Chrysler Corporation (US) of Rootes Motors.²³ These two mergers involved transfers of net assets of £114m and £60m respectively.

F. The Number of Companies Acquired by Acquiring Companies

Statistics are not available on the number of companies acquired by acquiring companies, but the Monopolies Commission Staff Paper²⁴ did observe that the largest companies were becoming involved increasingly in mergers. Their survey commenced with a sample of 2,024 companies at the end of 1957 and finished with 1,253 at the end of 1968. The survey showed that in 1958-60 companies with assets of more than £50m acquired 10% of the total companies acquired and 27% of the net assets involved. By 1968, however, the same group of

companies acquired 38% of the total companies acquired and 73% of the net assets involved. The largest companies (the top 40 in net asset terms) showed the highest overall growth (of nearly 200% based on 1957 net assets), some two-fifths of which was attributed to mergers.²⁵

In summary, the main features of these merger characteristics in Britain during the sixties are the trends towards, firstly, the increased scale of mergers, secondly, increasing seller concentration in many industries and, thirdly, increasing asset concentration in the hands of the very large companies. Merger activity increased from a 1960-63 level of around £300m per annum to a high point of £2,000m in 1968. Activity in 1969-70 was around £1,000m each year, which establishes quite clearly that a new level of merger activity was achieved and maintained. The next section discusses some aspects of the institutional environment influencing merger activity.

III The institutional environment

Three aspects of the UK's institutional environment during the period 1960 to 1970 are described in this section; they are: government merger policies, taxation policies and the Panel on Take-overs and Mergers.

A. Merger Policies

With a new high point reached in merger activity in 1965 (see Table 1), and the anti-competitive record by some large companies,²⁶ the time was evidently ripe for the government to take action in the field of merger regulation. The Monopolies and Mergers Act of 1965 allows the Monopolies Commission to report upon those mergers where:

- (i) the result of the merger is to create or increase a monopoly²⁷ in the supply of any goods or services in the UK or a substantial part of it, or
- (ii) the value of the assets taken over or to be taken over exceeds £5m.

Only those mergers nominated by the Board of Trade (later DTI) go to the Commission.²⁸ The Commission's procedure in merger cases has been published.²⁹ If the merger is found to be against the public interest, the Commission has the power under

²⁰ibid., 39, Appendix 11. Note that the UK Treasury insists that bids coming from abroad be in cash; see R. W. Moon, *Business Mergers and Take-over Bids*, (3rd ed., London: Gee & Co., 1968), 161-2. Details of the exchange controls are given by M. A. Weinberg, M. V. Blank, A. L. Greystoke, *Take-overs and Mergers*, (London: Sweet & Maxwell, 3rd ed., 1971), 222-5.

²¹G. D. Newbould and A. S. Jackson, *The Receding Ideal*, (Liverpool: Guthstead, 1972), 83.

²²*A Survey of Mergers 1958-1968*, op. cit., 13.

²³A. Vice, op. cit., 28-31, gives something of the background leading up to this merger.

²⁴*A Survey of Mergers 1958-68*, op. cit., 7.

²⁵ibid., 16.

²⁶See A. Hunter, *Competition and the Law*, (London: George Allen & Unwin Ltd., 1966), 269.

²⁷Defined as where at least one-third of the supply of any goods or services is in the hands of one company.

²⁸Note, however, the special provisions in relation to 'newspaper' mergers; see Board of Trade, *Mergers: A Guide to Board of Trade Practice*, (London: HMSO, 1969), 6.

²⁹ibid.

Section 3, which must be approved by Parliament, of either prohibiting, modifying, or imposing restrictions on the transaction.³⁰ Up to 1970, only 15 mergers had been considered by the Commission. Of the 15 referrals, eight were found by the Commission not to be contrary to the public interest, and a further two were not investigated. The remaining five mergers did not proceed. Emphasis in four of these cases, where the Commission found the merger proposal likely to operate against the public interest, was on the reduction in competition likely to result together with the possibility of increased prices.³¹ That a merger has been referred to the Commission does not create a presumption that it is against the public interest, nor is there an onus on the parties to the proposed merger to prove that the merger is in the public interest. The Commission's approach is essentially a pragmatic one: it takes into account all considerations which appear to it relevant in the particular case. These considerations will certainly include some, and might include any, of the considerations listed in the Board of Trade Guide.³² As H. W. Wertheimer points out, the UK government's steady preoccupation with its balance of payments troubles looms heavily on the Monopolies Commission's considerations of whether a merger is likely to operate against the public interest. In fact, the Commission's report (1969) in the Rank-De La Rue merger proposal reveals, besides greater efficiency, that the benefits to the balance of payments is now the Government's main criterion in evaluating mergers.³³

While the Wilson government introduced specific legislation to control mergers in 1965, in December of the following year the same government established the Industrial Reorganisation Corporation (IRC) in order to create an industrial structure which would enable the country to make effective use of its resources of skill, management and capital.³⁴ The

White Paper stated that the government's aim must be to promote a rising number of 'horizontal' mergers, but went on to note that there was no evidence that reliance could be placed on market forces alone to produce the necessary structural changes at the pace required.³⁵

The purpose of the IRC, then, was to promote rationalisation by concentration schemes capable of yielding substantial benefits to the economy – especially in terms of increased exports or reduced imports, technological advance, and the regional aspects of the government's policies for economic development.³⁶ Toward this end, £150m of public money was made available to the IRC to help suitable companies to merge. The influence of the IRC was felt in practically every sector, but its most spectacular interventions were in the largest mergers.³⁷

In 1969 and 1970 fears of monopoly situations started to reassert themselves as the problems of massive mergers became more widely known. Increasingly the IRC came under public scrutiny so that the possible drawbacks from increased concentration were aired as well as the widely publicised potential advantages. Finally, in October 1970, under increasing public pressure, the IRC was abolished by the Heath government.

In summary, the Government's philosophy is against the 'abuse' of monopoly power not monopoly power *per se*. Where mergers are concerned, this means that the vast majority have been good; in a very small number of cases they have been harmful.

B. Taxation Policies

N. H. Leyland contends that the passing of the 1965 Finance Act increased overnight the supply of companies willing if not anxious to be taken over. The invention for tax purposes of the close company³⁸ meant that the marginal average tax rate for a close

³⁰B. Hindley is very critical of the bland assurances obtained in some mergers (these are listed on p. 28 of the Board of Trade Guide) about the future behaviour of merging companies. See B. Hindley, *Industrial Merger and Public Policy*, (London: Institute of Economic Affairs, 1970).

³¹*Ibid.*, 27–28. These mergers were: Ross Group and Associated Fisheries (1966); United Drapery Stores and Montague Burton (1967); Barclays/Lloyds/Martins (1968); British Sidac-Transport Paper (1970). All of these were horizontal mergers.

³²*Ibid.*, ch. III.

³³H. W. Wertheimer, 'The International Firm and International Aspects of Policies on Mergers', *International Conference on Monopolies, Mergers, and Restrictive Practices*, ed., J. B. Heath, (London: HMSO, 1971), 187.

³⁴*The Industrial Reorganisation Corporation*, Cmd. 2889, (London: HMSO, 1966).

³⁵IRC, *op. cit.*, para. 4.

³⁶See N. A. H. Stacey, *op. cit.*, 106–110; and C. K. Rowley, 'Mergers and Public Policy in Great Britain', *Journal of Law and Economics*, XI, April 1968.

³⁷See R. Jones and O. Marriott, *Anatomy of a Merger* (London: Jonathan Cape, 1970): This book contains a fascinating account of how the IRC backed Sir Arnold Weinstock of GEC in gaining control of AEI and English Electric. See also A. Vice, *op. cit.*, 26–45, for an account of how the IRC backed Lord Stokes of Leyland in bringing about the merger with BMC.

³⁸Close companies are, broadly, companies which are under the control (in a very wide sense) of five or fewer persons, or are under the control of their directors. If a close company does not distribute out of its profits as much as the 'required standard' appropriate to its case it has to pay income tax on the amount of the 'short fall' just as if it had distributed that amount in addition to its actual distributions. See *Corporation Tax*, issued by the Board of Inland Revenue (February 1966), chapter IV.

company could be as high as 75 per cent. The effect of corporation tax was to reduce the liquidity of those companies that wished to maintain their dividend at previous levels. To this squeeze on liquidity was added the interest free loan to the government arising from set tax payments, and later very high interest rates combined with credit stringency. Leyland concluded that while the sillier faults of the 1965 Act had been remedied by the 1969 Act, there had been four years of doubt and uncertainty for a large number of companies:³⁹ conditions which Newbould found to be very conducive to merger activity.⁴⁰

Lord Shawcross has indicated another effect of the 1965 Finance Act.⁴¹ The Act made paper (shares and loan stock) more attractive to the offeree shareholders through the introduction of the capital gains tax, and also made the issue of debentures and loan stock more attractive to the offeror company. The reason for the former is that paper gives shareholders a deferment of any liability to capital gains tax.⁴² The reason for the latter is that while even prior to the Finance Act of 1965 a company resorting to loan stock was allowed to deduct loan interest for profits tax purposes, under the corporation tax legislation this same differential treatment applies, and the relative 'tax efficiency' of loan stock compared with both preference and ordinary shares has become marked.⁴³ The Finance Act of 1965, then, made paper attractive to offeror companies through first, the tax free share exchanges and, second, the deductibility of interest on debt for corporation tax purposes.

The decision to make a take-over offer is sometimes influenced by substantial accumulated tax losses of the offeree company. To an acquiring company able to put such an offeree company on to a profitable footing without causing a 'discontinuance' for tax purposes, the freedom from tax approximately doubles the net return, so that an acquiring company is able profitably to offer for the shares a price substantially above the value of the underlying assets, and yet obtain control over those assets at a price that is effectively less than their value to it. However,

the 1969 Finance Act sought to place greater restrictions on the carry-forward of losses upon a change in ownership. The new provisions are designed to prevent, following a change in a company's ownership, the profits of what is in substance a new trade being diminished for tax purposes by the carried-forward losses of what is in substance an extinct trade.⁴⁴

C. The Panel on Take-overs and Mergers

The London City Code on Take-overs and Mergers, now in its fifth edition,⁴⁵ is issued on the authority of the City Working Party, a body originally set up by the Governor of the Bank of England in 1959 for the purpose of considering good business practice in the 'conduct' of take-overs and mergers. Two main, though inter-related, threads run through the provisions of the Code:

- (i) that it is for the offeree shareholders to decide whether or not an offer shall succeed, and
- (ii) that there must be equitable treatment as between the various shareholders of the offeree company.

It is to this end that the Code enunciates 12 general principles of conduct to be observed in bid situations and lays down 39 rules based on these principles. The Code does not have the force of law. The Panel, as the administering body, works on a day-to-day basis through its full-time executives, headed by the Director-General.

The Panel came into operation on 27 March 1968, the date of publication of the first edition of the City Code. After a shaky start, due partly to its taking some time to gain acceptance and due partly to gaps in the then rules,⁴⁶ a second edition of the Code came into effect on 1 May 1969. At the same time, the Panel was reconstituted and given better sanctions.⁴⁷ Although the Panel has not been without its critics,⁴⁸ the Take-over Panel has, according to Vice, proved a considerable success,⁴⁹ a view also supported by many British lawyers.⁵⁰

⁴⁴*ibid.*, 253-4.

⁴⁵*The City Code on Take-overs and Mergers* (Amended, April, 1976).

⁴⁶The history and the development of the City Code and the City Panel have been documented by E. Stamp and C. Marley, *Accounting Principles and the City Code: The Case for Reform*, (London: Butterworths, 1970), part 1.

⁴⁷Not germane to this paper was the manner in which sanctions were sorted out through Stock Exchange and Board of Trade backing: see Stamp and Marley, *op. cit.*, 44.

⁴⁸E. Stamp and C. Marley, *op. cit.*, 57-62.

⁴⁹A. Vice, *op. cit.*, xiv.

⁵⁰G. F. K. Santow, 'Some Aspects of Regulating Take-overs and Mergers in Australia', *Australian Law Journal*, 46, (June 1972) 280.

³⁹N. H. Leyland, 'Monopoly Control from the Point of View of the Firm', *International Conference on Monopolies, Mergers and Restrictive Practices*, *op. cit.*, 108.

⁴⁰G. D. Newbould, *op. cit.*, 143ff. Newbould contends that merger activity is the result of increases in 'uncertainty' in the environment in which a company operates. Uncertainty is a result of changes in business conditions and the proliferation effect of other mergers.

⁴¹Lord Shawcross, *Report of the Panel on Take-overs and Mergers*, for the year ended 31 March 1971 (1971), 3.

⁴²See M. A. Weinberg, M. V. Blank, A. L. Greystoke, *op. cit.*, 243-6.

⁴³*ibid.*, 317.

IV The interaction of merger characteristics and the institutional environment

A. The Impact of the Institutional Environment on Merger Characteristics

The UK's merger policies in the 1960s have shown that the government is prepared to sanction high levels of merger activity. On the one hand, during the early 1960s the Textile Reorganisation Commission was set up to encourage the restructuring of the textile industry. Later, during the period 1965-70, the IRC acted as a catalyst; it positively encouraged mergers in some industries, especially among the largest companies, with prospects for increasing industrial efficiency. On the other hand, merger regulatory legislation was introduced for the first time in 1965. Since the Act took effect midway through that year, it is possible that the increase in merger activity recorded in 1965 (see Table 1) was brought about, in part at least, by difficulties companies had in trying to maintain trade association agreements. By merging before the proclamation date of the new Act it was possible for companies to also escape the provisions of the Restrictive Trade Practices Act 1956.⁵¹ However, in only a handful of mergers have managers been called to account and thwarted in their intentions. According to A. Sutherland, the Monopolies Commission is asked to search for detriment, not for benefit. Sutherland says that the Commission has tried to hide behind this term of reference.⁵²

Merger policies, then, have had an impact on the time series of merger activity, the industrial distribution, the type of integration and the number of companies acquired by acquiring companies. There does not seem to have been a direct effect on the geographic pattern; although amongst the international mergers involving the take-over of a UK company the IRC was instrumental in thwarting the Swedish SKF plans to merge with a company in the ball-bearing field.⁵³ The Exchange Control Act of 1947 gives complete discretion to the Treasury in cases involving the transfer of control of a UK company to a foreign corporation. In any such cases, the Treasury usually

require a cash offer. It is important to realise that British merger policies also had ramifications overseas. For example, in Australia during 1960-70, there were some 24 cases reported in the financial press where overseas mergers brought together the Australian subsidiaries of the merging companies. These mergers were important in the Australian market in terms of the size of the companies involved. It is significant that 21 of these mergers were between British companies, 13 of which took place between 1968-70 (including GEC-AEI-EE, BMC-Leyland, Reed-IPC, Dalgety and New Zealand Loan-Australian and New Zealand Land, ANZ-English Scottish and Australian Bank).⁵⁴ Empirical evidence on take-overs by UK and US subsidiaries in Australia during 1960-70 suggests that having gained a foothold in the Australian market, US-based companies tend to grow by internal means; whereas UK-based companies tend to take over further Australian companies in order to consolidate their position.⁵⁵ These patterns may, in part, reflect the rigour of the enforcement of antitrust policies in the two countries. The hypothesis is offered that merger policies have not influenced domestic merger finance.

The decision to acquire another company has been influenced by taxation policies. The three main tax considerations were: first, the tax loss situations; second, the close company situations, and third, companies whose gearing is unnecessarily in the form of tax inefficient preference shares. Taxation policies have also influenced merger finance. In particular, the deferment of the tax liability of the shareholders on capital gains when the consideration comprises shares or loan stock may explain the trend toward the increasing use of paper in financing mergers. This trend is also reinforced by the deductibility of loan interest in calculating corporation tax. The hypothesis is offered that taxation policies have not affected the industrial distribution, the type of integration or the geographic pattern of merger activity.

Lord Shawcross, Chairman of the Panel on Take-overs and Mergers, has indicated that he thinks the very existence of the Panel may itself sometimes discourage the initiation of transactions which would

⁵¹See M. A. Utton, 'Some Features of the Early Merger Movements in British Manufacturing Industry', *Business History*, XIV, (January 1972), 60.

⁵²A. Sutherland, *The Monopolies Commission in Action*, (Cambridge University Press, 1970), 53; see also M. E. Beesley and G. M. White, 'The Control of Mergers in the UK: an Analysis of Government Institutions and Attitudes', in J. M. Samuels, ed., *Readings on Mergers and Take-overs*, (London: Paul Elek Books, 1972), 140-1.

⁵³H. W. Wertheimer, 'The International Firm and International Aspects of Policies on Mergers', op. cit., 195.

⁵⁴These mergers were brought within the purview of the Australian Foreign Take-overs legislation in December, 1974.

⁵⁵I. C. Stewart, *Company Merger Characteristics and the Institutional Environment: an Analysis of Australia and Overseas Nations 1960-70*, unpublished Ph.D. thesis, University of New England, (1974), 159. Only one US-based company acquired four companies, whereas 12 UK-based companies made four or more take-overs of Australian companies.

be unlikely to survive careful scrutiny.⁵⁶ The Panel's widening and increasingly effective net of supervision in 1968-70 may have contributed to the reduced take-over activity of that period.⁵⁷ The Panel's rulings, to the end of 1970, had not influenced merger finance, but two recent rulings have changed this.⁵⁸ The hypothesis is offered that the Panel's rulings have not influenced the industrial distribution, the type of integration or the geographic pattern of merger activity.

B. The Impact of Company Merger Characteristics on the Institutional Environment

The rising volume of mergers in the early sixties, and the anti-competitive merger record of some large companies, were probably factors in bringing about the Monopolies and Mergers Act of 1965. Similarly, the merger boom of 1967-68, and the very high proportion of horizontal type mergers during that period and the consequent increases in seller and asset concentration, may have led to the tougher attitude of the Monopolies Commission in 1972.⁵⁹ Weinberg, Blank and Greystoke contend that before the passing of the Finance Act of 1969 there had been a certain amount of traffic in the shares of companies that had agreed tax losses as their principal asset.⁶⁰ The City Code and Panel on Take-overs and Mergers arose out of criticism in the Press and in Parliament of the tactics of bidders and defenders in a number of prominent bid battles. A series of these dramatic take-over battles in the late sixties also focused more attention on accounting. As S. A. Zeff pointed out, the Pergamon-Leasco take-over affair in 1969 ignited rather general criticism of accountancy in the financial press, which, together with suggestions from City institutions and the Government, provoked the English Institute's Council to announce a new

and more accelerated approach to the development of accounting principles.⁶¹

The hypothesis is offered that the industrial distribution, the form of merger finance and the geographic pattern of merger activity have not evoked any reaction from those aspects of the institutional environment considered in the study during the period from 1960 to 1970.

V Conclusions

In terms of the 'effects' engendered, 'interaction' between the institutional environment and company merger characteristics during 1960-70 has not been significant. However, the institutional environment has had a significant influence on company merger characteristics in so far as government policies created an environment in which mergers were positively encouraged by successive governments in the belief that UK industry was too fragmented and inefficient to cope with the rigours of the growing internationalisation of competition. The over-riding philosophy of UK governments has been against the 'abuse' of monopoly, not monopoly *per se*. On the one hand the Industrial Reorganisation Corporation positively encouraged mergers with prospects for increasing industrial efficiency. On the other hand, the Monopolies Commission has prevented a handful of mergers considered to have harmful public interest effects. The preoccupation with industrial efficiency and international competitiveness coupled with the impending membership of the European Economic Community amounted to a virtual abdication by the UK government of any real responsibility for regulating mergers during the period 1960 to 1970.

Less marked has been the influence of company merger characteristics on the institutional environment. A series of dramatic bid battles led to the Code and the Panel on Take-overs and Mergers; the accounting profession was galvanised into action on the development of accounting principles and trafficking in tax loss companies was restricted by tax reforms.

Acknowledgement

The author wishes to acknowledge his indebtedness to Professor G. G. Meredith, University of New England, Armidale, NSW, who supervised the Ph.D. thesis from which this paper is drawn.

⁶¹S. A. Zeff, *Forging Accounting Principles in Five Countries: a History and Analysis of Trends*, (Champaign, Ill.: Stipes, 1972), 69; see also E. Stamp and C. Marley, *op. cit.*, 69-73.

⁵⁶Report on the year ended 31 March 1971, 3.

⁵⁷This trend has been further reinforced in 1972-73 by further changes in the Code. Two new rules introduced in September 1971 and January 1972 have effectively put an end to market raids. See rules 33 and 34 in the amended Code of June 1974.

⁵⁸See fn. 57; these rulings should further reinforce the trend toward the use of paper in financing mergers.

⁵⁹Report from the *Financial Times*, see *Australian Financial Review*, 11 September 1972, 24, says that the reason why the M.C. rejected bids both by Boots and Beechams for control of Glaxo was not the danger of monopoly, but the inability of the two bidders to show that a merger would be in the public interest.

⁶⁰M. A. Weinberg, M. V. Blank and A. L. Greystoke, *op. cit.*, 253.

Meaning and Scope of Management Audit

J. Santocki

The research into various aspects of management audit reported in this paper extended over a period of two years and was conducted by means of mailed questionnaires, interviews, reading, exchange of letters and innumerable telephone conversations. A store of data has been accumulated containing the views of a significant proportion of the leaders of British industry, commerce and the professions. The contacts were not confined to the UK, but included Australia, the Netherlands, South Africa and the USA. This article is written on the basis of data collected from the 252 directors, executives, partners and academics who participated in the survey, 49 who participated in the pilot survey, seven long interviews, telephone conversations and extensive reading.

It is not the intention to 'sell' the idea of management audit; this is a report on data collected during the survey, and on the views of other authors in published works. Quotations from my report¹ are not referenced; sources are given for other quotations. The response rate to the pilot survey was 70%, and to the survey itself, 22%. The underlying research was undertaken with joint sponsorship from the Institute of Cost and Management Accountants and the City of Birmingham Polytechnic and was submitted as a thesis for the CNAA degree of MPhil in June 1975.

In the course of the research I found a great deal of interest among British directors and executives in this area and a significant measure of support for its development. Preliminary background reading, the first contacts and the pilot survey seemed to point out that industry and commerce realised the need for, and would accept, that some form of formal or informal, regular or irregular, outside assistance to management was needed – the word 'outside' meaning those who do not take direct part in decision-making. The function of 'outside assistance to management' appeared to be known to many and

seemed to be accepted as having practical application by some. What the name of the function should be, its exact meaning and scope, looked far from being resolved. There were some people who took the view that the concept of management audit was new.

The objective of two sections of the questionnaire was to gather data which would contribute to clarifying the concept and scope of management audit as understood in Britain. The UK position was that very little work had been done in this field and no published data were available. The concept of management audit was intentionally given wide meaning in the questionnaire. By testing the reaction of respondents to the suggested meaning of management audit it was hoped to establish definite areas of involvement for management auditors. The questions asked in the scope section of the questionnaire were intended to provide more detailed explanation of what were these areas of involvement of management auditors.

There were three specific aspects of the meaning and scope of management audit upon which several respondents expressed strong views.

The vagueness of the concept, e.g., 'I think that the whole question of management audit is so vague that even experts take different views. In many companies the work of management audit is done under different guises.' The respondents narrowed down this vagueness (see Tables 1 and 2 below).

The quantification of management performance was contested strongly by several respondents. These quotations represent well the views expressed by the opponents of quantification: 'Management is concerned with philosophy, ethics, personal relationships – any attempt to audit, within norms and financial criteria, will be destructive' and 'Financial auditing relates to factual information which in general cannot be disputed. Only methods of treatment can cause a debate. Management auditing relates to a subject which is more qualitative than quantitative and is therefore open to debate on interpretation. Management is a conceptual subject in much of its contents, and therefore by definition not quantifiable,' said a

¹J. Santocki, *Management Audit Survey – Report*, July 1974.

Managing Director. The above views were not acceptable to the majority of the respondents – 75% thought management performance could be evaluated.

The term itself came under strong criticism from several respondents, and two quotations reflect their views: 'If the word audit could be eliminated from the title the term would be more readily acceptable,' and 'To my mind the greatest impediment to the wide application of the concept is the very term itself – management audit – which we never use', wrote a Finance Director of a company with experience of management audit (under a different name). Once

the concept of the function is understood and accepted a new term can be coined – this should not be a problem.

Bearing in mind the above specific reservations there is a certain pattern emerging from the answers which were given by the respondents. The respondents provided a significant measure of support for the development of a detailed definition of the concept and scope of management audit. This is clearly shown in Tables 1 and 2. The tables present data ranked in descending order of the respondents' support given to each question.

TABLE 1
The meaning of management audit

Category – see KEY below	Strongly agree					Agree				
	1	2	3	4	Total	1	2	3	4	Total
Number of completed questionnaires	139	44	25	26	234	139	44	25	26	234
ANSWERS (percentages)										
QUESTIONS										
1 Identify existing and potential weaknesses in all functions and operations within an organisation	36	41	48	35	38	61	55	36	50	56
AND										
2 An objective and independent appraisal of the effectiveness of managers/teams of managers in their achievement of company objectives and policies	33	29	44	42	35	59	55	48	50	56
AND										
3 Recommend ways to rectify the weaknesses and potential weaknesses	30	34	44	31	32	52	55	32	54	50
AND										
4 Quantify the effect of weaknesses and potential weaknesses on organisation effectiveness	25	18	36	19	24	47	68	28	58	50
AND										
5 Identify the strengths of the organisation which should be built upon	19	23	28	15	21	50	52	40	65	51
AND										
6 Quantify net benefit arising from implementing these recommendations	17	16	16	8	15	40	39	40	58	42
AND										
7 Management auditor should also appraise organisational objectives and policies	13	9	32	12	14	32	43	20	35	33
AND										
8 Take part under management supervision in implementing these recommendations	10	2	16	–	8	23	27	16	19	23

KEY – Category: 1 Industry: manufacturing, construction and extractive.
 2 Commerce: retail, wholesale, transport, banking, finance, insurance, market research and advertising.
 3 Professional: management consultants and practising accountants.
 4 Miscellaneous: academicians 17; others: editor, top university administrators, industrial training boards, etc.

TABLE 2
The scope of management audit

Category – see KEY, Table 1	Strongly agree					Agree				
	1	2	3	4	Total	1	2	3	4	Total
Number of completed questionnaires	139	44	25	26	234	139	44	25	26	234
ANSWERS (percentages)										
QUESTIONS										
1 Appraise the business organisation structure to ensure that it is sound, supports the aims of the business, and utilises effectively all the people who work in it and other resources employed in it	32	27	56	58	36	54	61	40	42	53
AND										
2 Appraise management systems of planning and control to ensure that they are adequate, understood and continuously used by all	27	16	40	27	26	60	79	48	54	62
AND										
3 Appraise management control techniques including budgetary accounting and standard costing to ensure that proper and timely information is reaching all executive levels and is acted upon	39	27	52	46	38	48	59	40	38	48
AND										
4 Appraise management systems of planning and control to ensure that they are reviewed and updated regularly	22	20	36	27	24	58	70	48	58	59
AND										
5 Appraise overall results to determine if the objectives of the business are being met	23	27	48	46	29	53	64	44	35	52
AND										
6 Appraise management systems of planning and control to ensure that they can create an effective and timely communication system	23	16	32	31	24	49	66	52	46	52
AND										
7 Appraise technical competence of the staff including training schemes, equipment and other physical facilities to achieve the organisation's objectives	17	14	8	19	15	42	50	44	65	46
AND										
8 Appraise the business objectives and policies to determine if they are appropriate to the business and attainable	18	14	32	31	20	41	43	40	38	41
AND										
9 Keep management informed of developments in the business environment and appraise their likely impact on the company's objectives, policies and financial position	12	5	20	27	13	29	38	16	35	30

There were five areas of a management auditor's involvement in management work about which the respondents' answers and comments warrant attention here.

First: The lowest support was given by the respondents to the suggestion that a management auditor should 'take part under management supervision in implementing these [management auditor's] recommendations'. Eight per cent said that they strongly agreed and 23% that they agreed. The non-acceptance of the management auditor's involvement in the implementation of recommendations was not completely unexpected. Impartiality, independence and objectivity are the key factors in any form of audit. To allow or to expect a management auditor to be actively involved at the implementation stage would militate against these key factors. It would be naive to expect that a management auditor would remain well-qualified to 'audit' the working of his own implementations at a later stage.

The other objection strongly expressed by many respondents was that implementation of recommendations was clearly and entirely in the hands of line management – to involve a management auditor would be an unjustified encroachment on line management work and, as such, would be detrimental to the business organisation.

Second: The next low level of respondents' acceptance for a management auditor's area of involvement was that the 'management auditor should also appraise organisational objectives and policies'. This received 14% 'strongly agree' and 33% 'agree' answers. The explanations normally given for rejecting the management auditor's involvement with organisational objectives and policies were: This aspect of running the business was the prerogative of top management. Therefore management audit should stop prior to auditing at the board level. Management auditors work for the board and do not audit it. 'Management audit is for the board of directors and not of the board of directors.' The following quotation sums up well the views of the objectors: 'It is most important that the audit should not appraise top management objectives and decisions. This area is so sensitive that any possible good would be far outweighed by the likelihood that the audit would be curtailed or possibly never even started. However, the consistent application of standard appraisal routine, as applied within the terms of reference as laid down by top management, may make top management themselves review and re-appraise their own objectives, policies and decisions stemming from them'. It would be fair comment that the respondent did not totally reject that in a way top management could be audited, or made to listen to

a management auditor. The sensitivity of top management to any form of direct appraisal was present in many answers. There were respondents who took the view that the biggest problem in business was top management itself. The indirect impact of management audit on top management would over a period of time produce the same results, i.e. as if top management objectives, policies and the decisions stemming from them were subjected to appraisal by a management auditor. It would, therefore, appear that management audit would assist and benefit all levels of management.

Third: The idea that recommendations should be an integral part of management audit was strongly contested by a small but vocal minority of the respondents on two grounds: (i) This was an exclusive prerogative of line management, (ii) It made an auditor no longer independent and unbiased – how could an auditor 'audit' subsequently his own recommendations? The typical view was: 'By definition auditors are not innovators or implementors, so their responsibility should be restricted to drawing the attention of executive management for its action to the weaknesses or deviations in the corporate structure.' This restricted role for management auditors as 'trouble spotters' was not acceptable to the substantial majority of the respondents. They took the view that it was relatively easy to spot weaknesses but it required much greater effort to make recommendations. For management audit to stop at finding weaknesses would reduce its potential value and would make the function inferior. Therefore to recommend improvements must be an integral part of management audit. Thirty-two per cent replied 'strongly agree' and 50% 'agree' that recommendations to rectify weaknesses or potential weaknesses were an integral part of the function.

Fourth: The most positive approach supported by 21% 'strongly agree' and 51% 'agree' was 'to identify the strengths of the organisation which should be built upon'. A phrase like 'In our work we pay as much attention to strengths as weaknesses and in our reports we highlight strengths as much as weaknesses' describes well the attitudes of many respondents. This would appear to be the right philosophy, provided the optimum use of scarce economic resources was accepted as the aim of an organisation which was subject to a management audit. Concentrating exclusively on weaknesses tends to narrow one's vision. The support given to this question by so many respondents must be taken as most encouraging.

Fifth: There was a question in the questionnaire which was even resented by several respondents – 'Keep management informed of developments in the

business environment and appraise their likely impact on the company objectives, policies and financial position'. This was given 43% support in the survey of which 13% said 'strongly agree' and 30% 'agree'. The acceptance in the pilot survey was even lower, at 30%. The grounds for NO answers were: (i) It entered the realms of management; if the managers could not cope with these aspects of management work they were in the wrong place, i.e. the management auditor's advice would not be enough and what was required was surgery. (ii) Management auditors were neither experienced nor qualified to render these services. The first reason appeared to be due to a misconception of management's role, which at its simplest is 'management gets things done through other people'. Getting information for management through other people (management auditors) falls neatly into this pattern. There might be some justification for holding the second view. There appeared to be a shortage of 'seasoned' management auditors. If the need was there education and training would have to be directed towards satisfying it.

Taking into account the three aspects on which several respondents expressed reservations (vagueness, quantification and the term itself) and the five areas of management auditor's involvement dealt with above, the meaning of management audit would be:

Management audit is an objective and independent appraisal of the effectiveness of managers/teams of managers in their achievement of company objectives and policies in order to identify existing and potential weaknesses in all functions and operations within an organisation and to recommend ways to rectify these weaknesses and potential weaknesses. [This definition was given over 80% support (Table 1).]

The respondents' organisations represented 25% of the total number of employees and 25% of the total capital employed in the 1,000 largest UK industrial companies.² There were seven large public corporations participating in the survey. If these factors were taken into account and 80% support given to the meaning of management audit the above definition of the function would agree with the views of approximately one in every six of British directors and executives, other than very small companies. It would be in order to claim that there was a significant measure of agreement amongst British directors and executives. What seems to be needed is for this large measure of agreement on the meaning of management audit to become widely known.

The scope section, which is a more detailed explanation of the meaning of management audit, would appear to receive a significant measure of support, too. The areas of involvement for a management auditor which were endorsed by at least 80% of the respondents were:

'1. Appraise the business organisation structure to ensure that it is sound, supports the aims of the business, and utilises effectively the people who work in it and other resources employed in it.

AND

2. Appraise management systems of planning and control to ensure that they are adequate, understood and continuously used by all.

AND

3. Appraise management control techniques including budgetary accounting and standard costing to ensure that proper and timely information is reaching all executive levels and is acted upon.

AND

4. Appraise management systems of planning and control to ensure that they are reviewed and up-dated regularly.

AND

5. Appraise overall results to determine if the objectives of the business are being met.'

To clarify further the meaning and scope of management audit and to produce additional and more convincing evidence of support it is of interest to look at:

1. A selection of published definitions, especially some from outside the UK.
2. A selection of the respondents' comments in support of and explaining their specific answers to the questions in the questionnaire.
3. A comparison of financial and management audit.

First – a few definitions from outside the UK which were found interesting.

The first definition (Thomas G. Secoy): 'It is perceived to be essentially similar to a research project – that is, a study involving a careful investigation or systematic inquiry regarding managerial performance in which the auditor gathers evidence by means of objective research standards and procedures (including any applicable auditing standards and procedures), reaches a conclusion based on that evidence and then expresses an opinion, as his considered judgment, on management performance.'³

The definition explains well the *modus operandi* of management audit, the similarity in approach of a

²Calculated on the basis of 'The Times' 1,000 largest UK industrial companies.

³Thomas G. Secoy, 'A CPA's Opinion on Management Performance', *Journal of Accountancy*, July 1971, p. 58.

management auditor and a researcher should especially be noted. The subject matter of the function is clearly presented too. There is, however, an aspect of management audit not specifically stated in the definition, i.e. the management auditor's involvement with recommendations. Secoy clarifies this later: 'The auditor would have informed management of any deficiencies, of course, together with his recommendations for overcoming them.' (p. 59)

Another definition (William L. Campfield) reads: 'Management auditing . . . is an informed and constructive analysis, evaluation and series of recommendations regarding the broad spectrum of plans, processes, people and problems of an economic entity.'⁴

The two American definitions taken together give probably the best published version of the meaning of management audit. Campfield makes it clear that a series of recommendations by the management auditor is an integral part of the function. He also lists the management auditor's main areas of involvement. Secoy explains well the methodology of management audit and that the end product of the function is an expression of opinion, a considered judgment, and not a replacement of the management process itself, i.e. it is and must be seen as a service to management. These definitions can justifiably be considered as not being in conflict with the meaning of management audit as seen by the great majority of the respondents in the present survey.

Finally, two practitioners of the 'art' said: 'It is only a fact gathering tool that will help management appraise performance and identify areas which additional investigations may yield improvements.' and later in their book: 'In the opinion of the authors its prime job is to ascertain, verify and report, and not to recommend or implement solutions.'⁵ The authors admit that the exclusion of recommendations represents the minority view, but they feel justified in holding it on the grounds that it is difficult to be impartial and be in a position to audit subsequently the author's own recommendations. The minority of the respondents participating in the author's survey expressed the same view. An even smaller number of them accepted implementation as part of management audit.

The great majority of the respondents see management audit in a very similar way to the views of the American authors quoted above.

Second - A few of the respondents' comments accompanying their specific answers now follow:

(i) 'Management audit should be more directly involved with management development within a company, concerned directly with the planning and training in the long-term for those managers with high potential. In conjunction with the training sphere it can be used as a tool for probing individual knowledge gaps and for revealing problems which may arise out of inadequate or misplaced training, and be used to create an atmosphere where ideas are exchanged and there is greater participation and integration between the members of the management as well as determining future management development. The management audit has to take stock of the present situation, correct immediate problems, highlight the need for more detailed analysis related to present performance.' The recognition of management audit as an organisation training centre was given prominence by several respondents. The UK companies were not unique in this respect. The role of management audit in the eyes of this respondent was very positive, even creative. The same attitude could be recognised among many respondents.

(ii) 'The kind of management audit exercised here has a strong bias towards:

1. Organisation analysis and diagnosis.
2. Utilisation of staff, i.e. examination of staffing volumes and grade levels at which work is performed.
3. Verification of effectiveness of control mechanisms.
4. General managerial efficiency and effectiveness (but not assessment of individuals' capabilities).'

The main areas of the management auditor's involvement were well stated here.

(iii) 'We have operated over many years an established procedure for management audit; in our case this process has to do essentially with the review of the existing organisation, of future organisational changes to accommodate foreseeable developments in business objectives and activities, and the review of existing management resources coupled with the development of individuals to meet changing organisational requirements and to bring about appropriate career developments . . . a quantification of the cost/benefit elements relating to the use of human resources and these ingredients do not at present form part of our management audit procedure.' There were three elements in this quotation which should be noted: future-orientated management audit; reservation or even rejection of the quantification aspect of manage-

⁴William L. Campfield, 'Trends in Auditing Management Plans and Operations', *Journal of Accountancy*, July 1967, p. 42.

⁵Roy A. Lindberg and Theodore Cohn, *Operations Auditing* (American Management Association, 1972), pp. viii and 12.

ment audit; and recognition of the need for staff development and the role of management audit in this area of management was emphasised again. The acceptance of the need to adapt to changes must not be overlooked.

Third – A comparison of financial and management audit is also needed. There was some evidence that the concept of management audit was confused with that of financial audit. Financial audit is, to put it at its simplest, aimed at evaluating methods of handling and accounting for financial resources. The financial auditor's objectives are to confirm a state of financial affairs and to verify that generally accepted accounting principles have been applied on a consistent basis. The concept of management audit as described earlier in this article is different. The financial audit, unlike management audit, does not:

- (a) Measure progress towards objectives.
- (b) Account for the non-fiscal essentials of management.
- (c) Look wholly to the future.
- (d) Evaluate the efficiency of functional operations within the company.
- (e) Relate the fiscal data to current management decisions.

Table 3 compares management audit and financial audit concepts.

The two concepts are distinct even though both are concerned with business transactions and their impact on the well-being of an organisation. The management auditor's approach is more positive, creative and even aggressive. The expression which probably describes best a financial audit is 'a shareholder's legal watchdog', which in the context of its present meaning would be a totally inappropriate

description for a management auditor.

To sum up: There would appear to be no justification for the statement that 'there are as many definitions of management audit as there are directors'. There was acceptable, even convincing, evidence provided by the majority of the respondents that the meaning and scope of management audit was definite, understood and accepted by them as a truly workable concept. This view of the majority of British directors, academics, executives and professional people seemed to be supported by many non-UK writers. The only element which received greater reservations in the UK than it would appear to receive in non-UK literature was the quantification aspect of management audit. Therefore the suggested definition of management audit does not appear to require material amendments, but the original wording can and should be expanded to give a more comprehensive description of the function. The definition should read:

'Management audit is an objective, independent, informed and constructive appraisal of the effectiveness of managers/teams of managers in their achievement of company objectives and policies in order to identify existing and potential weaknesses and strengths in all functions and operations within an organisation and to recommend ways to rectify these weaknesses and potential weaknesses. It must be seen as a managerial function, and as such must assist management, and in doing so, strengths and not only weaknesses must be reported upon.'

This definition would be endorsed by over 70% of the respondents, and amplified by the five elements of scope stated above would comprise a comprehensive definition of the function.

TABLE 3

A comparison of management audit and financial audit concepts

<i>Characteristic</i>	<i>Management audit</i>	<i>Financial audit</i>
1 Purpose	To aid management to improve company operations	To express an opinion on financial statements as they disclose/do not disclose a true and fair view
2 Scope	An operation or function	Fiscal records
3 Orientation	The operations of the company present and future – management orientated	A retrospective viewpoint
4 Frequency	Periodic but with indefinite timing	Regularly, at least annually
5 Method	Management techniques	Auditing standards and procedures
6 Measurement	Standards for evaluating management performance; management principles	Accounting principles
7 Necessity	Optional, management prerogative	Legally required
8 Recipients	Management	Shareholders

Criteria for Consolidation*

J. C. Shaw

In 1972, when preparing the third edition of *Bogie on Group Accounts*, I wrote, 'It is likely that, during the 1970s, the most difficult questions to be resolved . . . will be the determination of the existence of a "group" and the proper identification of members of a group'.¹ Developments since have tended to confirm the validity of that view. It is perhaps now appropriate to review some of the problems, particularly in the light of recent Statements on Consolidated Accounts by the International Accounting Standards Committee (IAS No. 3) and by the EEC (proposed Draft Seventh Directive).

As has recently been pointed out by Professor R. H. Parker,² current UK practice does not identify or use consistently any one basic concept of consolidation. If the concepts are neither standardised nor universally understood, it is hardly surprising that the practical criteria for consolidation are confused. Since we cannot proceed from concepts to criteria, perhaps sharper definition of criteria would help to establish appropriate concepts.

Definition of a 'group' under UK legislation

The basic legal definition of a 'group' as 'consisting of parent and subsidiary companies is, of course, embodied in paragraph 154 of the Companies Act, 1948:

(1) . . . a company shall . . . be deemed to be a subsidiary of another if, but only if, . . .

(a) that other either

(i) is a member of it and controls the composition of its board of directors; or

(ii) holds more than half in nominal value of its equity share capital; or

(b) the first-mentioned company is a subsidiary of any company which is that other's subsidiary;

and

(4) . . . a company shall be deemed to be another's holding company if, but only if, that other is its subsidiary.

(UK tax law provides slightly different definitions of subsidiary, but it is likely that a group relationship for tax purposes will only arise where there is a basic group relationship under the Companies Acts.)

The essential point of these definitions is that the holding company must itself hold shares in the subsidiary. (Alternative (a) (i) refers to the need to be 'a member' and (a) (ii) refers specifically to holding 'more than half in nominal value of its equity share capital'.) Subsection (3) of paragraph 154 specifically excludes from consideration shares held in a fiduciary capacity and deals with the question of nominee holdings. The intention of subsection (3) seems to be to clarify *effective* shareholding.

This legal UK definition has remained unaltered since its first enactment in the Companies Act, 1947 (subsequently consolidated into the 1948 Act).

The Jenkins Committee in its 1962 Report was concerned only to remove what it saw as the anomaly of a single company qualifying as a subsidiary of two separate holding companies through (a) (i) and through (a) (ii) and proposed the repeal of subsection (a) (ii). It was not concerned to modify the basic qualification of 'membership' in considering the parent/subsidiary relationship. The Companies Act, 1967, did not amend the then 20-year-old legislation. Neither the Companies Bill, 1973 (which lapsed on the February 1974 dissolution of Parliament) nor the Companies Act, 1976 proposes any amendment to these definitions.

The emphasis on 'membership' is rather surprising in the context of the recommendations of the Cohen Committee (the Report of which formed the basis for the Companies Act, 1947). These appeared to emphasise the concept of 'control', and only introduced the concept of an equity majority as being a situation where concentrated ownership might well provide 'practical control'.

There certainly seem to be cases where the 1948 definition is looked at very carefully, particularly in the context of the phrase 'if, but only if'. Paradoxically, the Companies Act, 1967 has focused attention more sharply than before on this problem because of the requirement then introduced (paragraph 3) to disclose the identity of subsidiaries (and other information). There have been cases where there has been no objection to the consolidation of figures relating to a subsidiary, but disclosure of the identity

*To be published in 1977 as part of the Supplement to the 3rd edition of *Bogie on Group Accounts*.

¹J. C. Shaw, *Bogie on Group Accounts* (Jordan & Sons, 3rd ed., 1973), p. 2.

²R. H. Parker, *Concepts of Consolidation in the E.E.C.*, (Working Paper Series No. 3, University of Dundee, Department of Accountancy, 1976).

and of the significance of the parent/subsidiary relationship has been seen as an obstacle. (Subsection (3) of paragraph 3 of the Companies Act, 1967, does provide certain exemptions from the disclosure of the identity of subsidiaries, but these relate either to subsidiaries incorporated outwith the UK or, subject to Department of Trade agreement that disclosure would be harmful, to subsidiaries operating outwith the UK.)

Some apparent anomalies

The following examples illustrate situations which are believed not to constitute a group within existing UK law:

(1) Mr. A and his family own the entire issued share capital of Company X Ltd and Company Y Ltd. No 'group' exists although both companies are clearly under the control of a single individual or small number of individuals acting in concert. Even if Company X Ltd owned, say, 30% of Y Ltd, there would be no Companies Act group – unless there was an unlikely provision that X Ltd could also appoint a majority of directors to the Board of Y Ltd.

In this type of situation there may well be significant inter-company commercial relationships and trading transactions. The effect of these may be obscured by the non-consolidation of the figures, and difficulties in interpreting the results or financial status of the companies concerned can be aggravated if different accounting dates are selected. (The Report of the Inspectors appointed by the Board of Trade in the Pergamon Press affair contains references to problems of this type.)

(2) A 'consortium' company will not normally be consolidated with any of its partners (but will, of course, usually be dealt with as an associate of its separate shareholders). For example, A Ltd, B Ltd and C Ltd hold between them the entire issued capital of X Ltd in the proportions respectively of 45%, 30% and 25%.

Despite 'fragmented' shareholding there may be very clear *de facto* or even legal 'control' without satisfying the Companies Act definition. For example, X Ltd may have granted a management contract to one of the shareholders under which, say, C Ltd provides managerial, administrative and commercial services. The registered office, or even the operating address, of X Ltd may be at the same address as that of C Ltd. Other circumstances might be that a majority of the personnel on the Board of X Ltd are directors of C Ltd – with the support or connivance of A Ltd and B Ltd. This

'control' by C Ltd would not, however, make X Ltd its subsidiary in these circumstances. Even the existence of an option held by C Ltd to acquire the holdings of either or both of its partners in the consortium would not establish the parent/subsidiary relationship with X Ltd.

Even if all three companies A Ltd, B Ltd and C Ltd were wholly-owned subsidiaries of H Ltd, X Ltd would not be a member of the group from the point of view of legal definition. Of course, in such a case the effect of 'equity accounting' for the individual associate interests in X Ltd would incorporate figures equivalent to the whole of its profits and of its net assets. It would then be necessary to consider the 'true and fair view' of the group accounts of H Ltd, and such consideration would probably lead to the normal consolidation of X Ltd as if it were in law as well as in fact a subsidiary member of the H Group.

The practical consequences of the accounting treatment of consortia can be illustrated by considering another example – the reporting in different ways of the implementation of new ventures or diversification policies. Consider three companies, M Ltd, N Ltd and O Ltd, all established and operating in one trading activity. New technology or new markets are developed which M Ltd decides to exploit independently, forming a new subsidiary and (say) appointing new management with appropriate skills. N Ltd and O Ltd decide to co-operate and finance and manage the new developments jointly through a consortium company X Ltd, so set up as to be a subsidiary of neither. The group accounts of M Ltd will consolidate all profit and loss account and balance sheet figures for its new subsidiary, but N Ltd and O Ltd will just bring in the 'one line' proportion of net income and of net assets of their 50% associate X Ltd.

This illustration could be considered further, if N Ltd for whatever reason – perhaps because of its greater previous research effort – had the right to nominate a majority of the board of X Ltd. Thus X Ltd would in these circumstances be a subsidiary of N Ltd, which would consolidate all appropriate profit and loss account and balance sheet figures for X Ltd, deducting the appropriate minority interest (of O Ltd) as 'one line' items (corresponding to the figures that O Ltd would be bringing into its accounts for its associate).

Clearly, the group accounts of the three competitors M Ltd, N Ltd and O Ltd would reflect quite differently the financial impact of their new commercial developments.

(3) Fellow-subsidaries will not constitute a group.

For example, if H Ltd holds 100% of the shares of X Ltd and (say) 70% of the shares of Y Ltd, X Ltd and Y Ltd together do not constitute a group. Even if X Ltd holds the outstanding shares in Y Ltd, X Ltd and Y Ltd, without H Ltd, will not constitute a 'group'. They obviously would if the total holdings were organised differently; for example, if H Ltd held 100% of X Ltd and X Ltd in turn held 70% of Y Ltd (the 'outstanding' 30% in Y Ltd being held directly by H Ltd).

This point may seem more theoretical than practical because normally the 'outer' group of H Ltd, X Ltd and Y Ltd will be consolidated if all are within the same territorial jurisdiction. However, if X Ltd and Y Ltd are subject to one legal system – say the UK – and H Ltd is subject to another – say the USA – then the difference between the two structures may well be of real significance. (Some specific problems of multinational reporting will be referred to later in this article. Steps do appear to be in hand through EEC and through OECD to improve the quality of reporting by such business entities.)

Quite apart from these 'multinational' considerations, there may well be situations in large groups with complex structures and significant inter-company trading where the sub-consolidation of fellow-sub-subsidiaries would be relevant and informative – both to shareholders in the ultimate parent company and to the minorities.

The 1975 accounts of Price and Pierce (Holding Company) Ltd – itself a wholly-owned subsidiary of Tozer Kemsley and Millbourne (Holdings) Ltd – incorporated figures for a fellow-sub-subsidiary, Price and Pierce International Inc. The audit report was accordingly qualified because of the lack of basis under UK law for such consolidation. Section 150 of the Companies Act, 1948, does provide for certain exemptions and exclusions from the preparation of group accounts. Perhaps for the present discussion it is relevant to note particularly subsection 2(a) of Section 150, the effect of which would be to avoid the need of sub-consolidating X Ltd and Y Ltd in the alternative 'vertical' structure illustrated above, *as long as H Ltd was incorporated in the UK*.

(4) It has been suggested that H Ltd is *not* the parent nor is S Ltd the subsidiary in the following circumstances:

The shareholders of S Ltd are three or four persons independent of H Ltd. These independent persons constitute the Board of S Ltd. These independent persons are given an option to put their shares in S Ltd and to require H Ltd to acquire them. H Ltd is given a call option on

the shares in S Ltd under which the independent persons can be required to transfer their holdings to H Ltd.

There is a fine question as to whether this set-up falls within the definition of Section 154 which probably turns on the point of whether or not the 'independent persons' are nominees of H Ltd. Leaving that aside, however, there is no doubt that H Ltd 'controls' the activities of S Ltd and has the (legal) right to intervene and to demonstrate its power to do so.

(5) P Ltd is not a 'member' of A Ltd, but has the right to acquire such new shares in A Ltd to give it, say, 75% of the enlarged share capital. (The proportion is usually influenced by taxation considerations.) Although not a member of A Ltd, P Ltd is entitled to appoint all, or a majority, of the Board of A Ltd, and in fact manages A Ltd in consideration of a promise to advance working capital.

In this type of arrangement, A Ltd is neither a subsidiary, nor an associate, of P Ltd, although it is undoubtedly 'controlled' by P Ltd. The financial results of the operations of A Ltd will not be consolidated within the P 'group' – except that to the extent to which A Ltd incurs losses, P Ltd will make provision for a bad debt against the advances it has made to A Ltd. The loan to A Ltd is unlikely to be disclosed specifically in the accounts of P Ltd and the financial and commercial relationship between P Ltd and A Ltd is unlikely to be dealt with under existing law.

So there do seem to be a number of situations where relationships of effective control will exist, but where there is no parent/subsidiary relationship within the criteria of the Companies Act definitions. Thus the conclusion of the Cohen Committee that 'the question of control shall as a general rule be decisive' is not being satisfactorily achieved.

At the same time, we should acknowledge that the Cohen Committee's recognition of 'practical control' through a holding of more than one-half of the equity has led to contrary difficulties. Subsection (5) of paragraph 154 of the Companies Act 1948 defines equity share capital as being:

its issued share capital excluding any part thereof which, neither as respects dividends nor as respects capital, carries any right to participate beyond a specified amount in a distribution.

Thus the legal definition of a subsidiary becomes dependent upon *participation* rather than *control*.

For example, X Ltd has in issue

11m 'A' ordinary shares of £1 each

9m 'B' ordinary shares of £1 each

which rank *pari passu* as regards dividend and

capital repayment, but the 'A' shares have no votes and the 'B' shares do. A Ltd holds all the 'A' shares and none of the 'B' shares. Then, under subsection (1) (a) (ii) of paragraph 154, X Ltd is a subsidiary of A Ltd, although A Ltd has no 'control' and no means of exercising control.

One further example will illustrate the huge range of potential anomalies which may arise because of the confusion between *participation* and *control*.

The issued share capital of Y Ltd consists of the following:

	<i>Held by A Ltd</i>	<i>Held by B Ltd</i>
'A' Ordinary (no votes)	8.0m	2.0m
'B' Ordinary (voting)	2.4m	7.6m
Total Shares	10.4m	9.6m
Total 'Equity'	52%	48%
Total 'Votes'	24%	76%

On the 'equity' test, Y Ltd is a subsidiary of A Ltd, and on the 'membership and control' test is a subsidiary of B Ltd. Clearly B Ltd exercises effective control and in this example not only can B Ltd use its voting power to control the composition of the Board, but could also 'force through' special resolutions against the votes of A Ltd. It is this anomaly which the recommendation of the Jenkins Committee would have removed by eliminating the 'equity' (or *participation*) test.

International Accounting Standard No. 3

The International Accounting Standards Committee published, in June 1976, its International Accounting Standard No. 3 (IAS No. 3) which deals with Consolidated Financial Statements. This followed publication of an Exposure Draft on the same subject in December 1974, and in July 1976 the UK accountancy bodies issued the International Standard to their respective members with identical introductory Prefaces. There is as yet no UK Statement of Standard Accounting Practice on Consolidated Accounts,³ but IAS No. 3 is of direct relevance to UK companies for two reasons.

The first is through the Stock Exchange support for the International Accounting Standards. Note 28 to the Listing Agreement says:

... The Council [of the Exchange] expect the accounts of listed companies ... to be prepared

in conformity ... with the international accounting standards published by the IASC.

Secondly, all UK companies will shortly be required to observe IAS 3, because paragraph 2 of the UK Accountancy Institutes' Preface to IAS 3 says:

... it is the intention of the Councils of the UK and Irish accountancy bodies to publish before [31 December 1977] a Statement of Standard Accounting Practice in accordance with the features of this International Standard so that compliance with the UK and Irish Standard will result in a compliance with the International Standard.

The International Standard avoids any confusion between *participation* and *control*.

The Definitions (para 4) include the following:

A *subsidiary* is a company which is controlled by another company (known as the parent company); and

Control is ownership, directly, or indirectly through subsidiaries, of more than one half of the voting power of a company.

We should note the *voting power* basis for defining *control* (the Standard contains a footnote making clear that it refers to rights attaching to shares issued and outstanding, i.e. excluding those relating to shares held by the issuing company itself, a useful practice permitted in a number of countries but not the UK).

The practical consequences of this definition of 'control' could include, for example, the temporary voting rights of preference shares in arrears for dividend. Such a situation would be covered by paragraph 36 of the International Standard.

The Standard also states that:

A subsidiary should be excluded from consolidation if:

- (a) control is to be temporary, or
- (b) the subsidiary operates under conditions in which severe long-term restrictions on the transfer of funds impair control by the parent company over the subsidiary's assets and operations.

Temporary control would arise, for example, if an investing company found that it controlled over one-half the voting power by virtue of its established holding in preference shares on which arrears had only recently arisen. This situation would accordingly involve consideration of the likely reduction of arrears – will the enfranchisement really be temporary? It will also lead to consideration of the *intentions* of the investing company. Does it intend to achieve control and are the use of preference share votes simply a means of attaining this objective?

Conversely, a purely temporary loss of voting

³An Exposure Draft of an SSAP on Consolidated Accounts is currently being developed under the aegis of the Accounting Standards Committee.

control due to the votes attaching to outside-held preference shares need not of itself involve leaving a company out of the consolidation. The tests in this instance involve the same considerations as those just mentioned. Is the loss of voting control really such as to deprive the investing company of effective control over assets, income, and activities? The answer to that question will depend upon an assessment of the likely duration of the changed voting power, and upon the intentions of the (former) parent with regard to the re-establishment of control.

Within the concept of consolidating on the basis of control, the International Standard deals entirely consistently with subsidiaries leaving the group. The effect of its provisions would be to incorporate the results of a subsidiary within the consolidated statements for the whole of the period during which it is controlled. The results of a former subsidiary up to the date of disposal should be incorporated in the group accounts. The International Standard thus explicitly confirms in this respect the validity of proposed accounting treatment for former subsidiaries which is not yet consistently applied in UK practice.

The International Standard also provides (in paragraph 38) that a company *may* be treated as a subsidiary and consolidated even if the group does not have control as defined, but if it satisfies one of two further criteria, either:

- (a) owns more than half the equity capital, but less than half the voting power, or
- (b) has power to control, by statute or agreement, the financial and operating policies of the management of the company, with or without more than one half of the equity interest.

It must be emphasised that such consolidation is permissive and not compulsory under the International Standard. Alternative (a) does not seem fully consistent with other bases and concepts discussed in the International Standard, and perhaps it has been introduced for political reasons to avoid embarrassing UK groups under existing UK law. For the reasons discussed earlier in this article the test of '*participation*' rather than '*control*' may not be relevant and it might be desirable to abandon it.

Alternative (b) is much more consistent and seems more relevant since it recognises the possibility of *effective* control without *de jure* control. The disappointing aspect of this particular provision is that the consolidation is only permissive and it might with advantage be extended to be made obligatory.

EEC draft Seventh Directive

The test of *control* has been taken a step further in

the Proposal for a Seventh Directive (published in April 1976) in the harmonisation programme on company law submitted by the Commission of the European Communities. This draft Seventh Directive deals with Group Accounts. The fundamental concepts introduced in the draft Seventh Directive are those of '*dependency*' and of '*central and unified management*'.

Article 2 (paragraph 1) defines a dependent undertaking as 'an undertaking over which another undertaking . . . is able, directly or indirectly, to exercise a dominant influence'.

Article 2 (paragraph 2) goes on to raise a presumption of dependency in three stated circumstances, namely:

- (a) holds the majority of subscribed capital; or
- (b) controls the majority of votes; or
- (c) can appoint more than half the board.

Put into UK terms, the Companies Act, 1948 definitions would raise a presumption of '*dependency*' but would not be restrictive – as they are at present interpreted – in denying parent/subsidiary relationship in other circumstances.

Article 3 (paragraph 1) then goes on to apply a further test before identifying the existence of the group. Not only must there exist a relationship of dependence on the one hand, and of dominant influence on the other, but the dominant undertaking must exercise 'in practice its dominant influence to the effect that all [group undertakings] are managed on a central and unified basis by the dominant undertaking'. Again (paragraph 2) there is a presumption that undertakings between which the dependent/dominant relationship exists do in fact constitute a group. It is, however, only a presumption, and the basic requirement is the exercise in practice of central and unified management.

This is a test which certain members of a UK-defined group might not satisfy. Thus Article 2 extends the concepts by which we define potential members of a group, and Article 3 applies a practical test of whether or not a group does in fact exist. Article 2 accordingly extends the possibility of there being a group to circumstances which are not at present recognised by UK law (see, for example, the illustrations of anomalies above) and Article 3 would deny the existence of a group in some circumstances which UK law at present identifies as satisfying parent/subsidiary definitions.

'Central and unified management' is, not surprisingly, undefined. It is not absolutely clear, for example, whether overall financial control – that is, effectively, the right to veto projects or impose minimum levels of financial contribution – would fall within this concept. Presumably it would..

Article 4 of the draft Seventh Directive then goes on to recognise the overriding significance of 'central and unified management'. If 'undertakings are managed on a central and unified basis, each such undertaking is a group undertaking' even where 'no relationship of dependency as defined in Article 2 exists'. (This would seem clearly to cover examples 1 and 5 referred to above which do not fall within the present UK legal definition, and would also be outwith the definition of IAS No. 3.) Article 4 also extends (in paragraph 2) the group concept to the consortium structure, looking only at the practical test of central and unified management as distinct from any tests of shareholding or *de jure* voting rights or other legal bases of control.

These proposals with their emphasis on discerning central management control as the essential test can be sharply distinguished from both the UK legal and IASC requirements which demand ownership of shares as an essential criterion. The practical EEC criterion with its attempt to establish the 'realities' of the financial and commercial relationships seem to be, in current conditions, the more relevant.

Suggested criteria

A combination of the ideas derived from the EEC and from the IASC is suggested as a helpful basis for establishing the existence of a group:

1. Emphasis on the economic realities of business organisation rather than legalistic concepts of ownership would be a useful first step. The tests of 'dependence' and 'central and unified management' proposed in the EEC draft Seventh Directive would be a helpful basis for establishing the existence of a 'group'.
2. In deciding which components of such a group should be 'consolidated' a second test suggested by (but not exactly the same as) the International Accounting Standard No. 3 could be applied. It would be appropriate to consolidate accounts only for those group members in respect of which the 'unified management' can effectively control the assets and activities for the benefit of those participators in the dominant undertaking to whom they report.

Adoption of these criteria would be entirely consistent with an objective of consolidated statements as identified in 1973 by the Accountants' International Study Group in their report on *Consolidated Financial Statements*. Paragraph 26 of that report contains the following assertion:

... The shareholder of the parent company is interested in consolidated statements which give

the overall results of operations attributable to the investment which he has in the parent corporation and in the earnings per share, funds flow and similar information related thereto . . .

Criteria for consolidation would thus depend upon definition of what results were 'attributable' to the investment in the parent. If the results cannot be *controlled*, can they be attributed?

Examples of the application of these principles can be imagined, but here are a very few:

(a) A subsidiary undertaking is 'taken over' by a workers' co-operative. In such a case neither of the two tests above would be satisfied - there is no 'central management' and certainly no ability to manage for the benefit of proprietors. The UK has certainly seen some examples of 'work ins' or other occupations during the early 1970s.

(b) Civil war disrupts internal trading and interrupts international movement of funds. Again such a case will fail both tests. A recent example might be Angola.

(c) Political and economic upheaval (short of civil war) disturbs normal currency movements. Even if the central and unified managerial arrangements continue effectively unchanged and the dominant/dependent relationship subsists, the management is not able to manage assets for the benefit of the participators in the dominant undertaking, nor to make profits available to them. On this basis there would be no consolidation. Perhaps Portugal has provided a recent example.

It may, of course, be argued that each of these three cases can be (and is in practice being) adequately dealt with under existing UK law and that there would be no question of consolidation in the circumstances outlined under the 'true and fair' test. Evidence to support such a contention can be found in the *Survey of Published Accounts 1975* published by the Institute of Chartered Accountants in England and Wales which summarises the results of a review of the published accounts of 300 major UK industrial companies. From table 28 (page 100) it appears that there were 29 cases out of the 300 (26 in 1974) where subsidiaries were not consolidated for the following reasons:

	1974-5	1973-4
subsidiaries not trading or figures not material (Note 1)	9	3
not practicable to include	4	8
inclusion would be misleading (Note 2)	14	11
business radically different	2	4
	—	—
	29	26
	—	—

Notes:

1. Included under the heading of 'not trading or not material' are cases where the subsidiary had been very recently acquired.
2. The commonest reasons why 'inclusion would be misleading' were political factors preventing remittance of funds and lack of real control.

	1974 £m	1973 £m
Profit attributable to Holding Company	.574	.496
Net Assets applicable to Group	2.048	1.825

In addition, dividends payable to Holding Company since UDI totalling £1.562m (1973: £1.293m) have been paid over to a Blocked Currency Account in Rhodesia.

Overseas subsidiaries

What would be thrown into focus, however, by the adoption of the criteria suggested above is the assessment and treatment of overseas investments. At the moment it is clear that a former subsidiary will cease to be consolidated following expropriation or nationalisation. Short of this extreme case, however, the normal practice is to consolidate the accounts of overseas companies as if they were the same as domestic subsidiaries (subject, of course, to currency translation). It is true that cases such as subsidiaries in Portugal and Angola have been highlighted in recently published accounts, and the long standing problems of dealing with the accounts of Rhodesian companies since UDI have also attracted attention. Two different treatments of that particular problem can be illustrated from the following examples extracted from the ICAEW *Survey of Published Accounts 1975* already referred to:

(i) *Turner and Newall Ltd* 31 December 1974

Extract from note on accounting policies:

1 (b) Subsidiaries not consolidated

As the constitutional dispute between the Governments of the United Kingdom and of Rhodesia remains unsettled, it is not possible to obtain information or accounts from the subsidiaries operating in that country. The consolidated profit and loss account does not, therefore, include any profits or losses which may have been made by subsidiaries operating in Rhodesia. The interests in these subsidiaries (Company £795,000, Group £380,000) comprise the cost of the shareholdings in and amounts due by or to these companies. In present circumstances, no attempt has been made to value these interests.

(ii) *British Insulated Callender's Cables Ltd* 31 December 1974

Extract from notes on accounts:

The Group Accounts include the Profits and Assets of two Subsidiary Companies in Rhodesia which are unable to remit dividends to UK. The relevant amounts are as follows:

These two examples make it clear that even in the Rhodesian situation there is no uniformity of treatment. In the second case in particular the income figures are consolidated despite the fact that they cannot be made available to the UK shareholders. It is probably misleading to include the figures in the group results, even with the specific note. If they are insignificant in a group context there seems to be no need to include them and, the more significant the figures are the more misleading the consolidated accounts become. Certainly, they would be excluded on the bases of the criteria suggested above.

The appropriate carrying value of the group investment in such situations is, of course, a question different from that of consolidation. In the Turner and Newall example, quoted above, it appears that 'cost' is regarded as an appropriate measure – or at least no different valuation has been attempted. There may well be cases – for example, Angola again – where the carrying value of such an investment should be written down below cost, or written off completely in the accounts of the investing company and thus in the consolidated accounts of the rest of the group. It is difficult to envisage circumstances in which the non-consolidated investment should be written up to a figure in excess of cost – unless perhaps it is close to the point of disposal in such a way that the proceeds of disposal will become available to the shareholders of the investing group. This latter condition of availability is not likely to be satisfied in the circumstances discussed as the basis of non-consolidation. (However, paragraph 41 of International Accounting Standard No. 3 surprisingly suggests that a subsidiary not consolidated because of restrictions on currency transfer should be dealt with on the equity accounting [UK associate] method.)

Sometimes, in order to secure the benefit of relatively low rates of overseas tax on profits retained abroad, a group has to satisfy the UK tax authorities that an overseas subsidiary is in fact managed overseas. For tax reasons the parent company is at pains to establish that it does *not* control the subsidiary. It

is perhaps worth considering if the establishment for tax purposes of the existence of control – or rather, its absence – is a relevant factor in deciding whether or not to consolidate figures for an overseas subsidiary.

As far as availability of income and effective control over the disposition of net assets are concerned there are perhaps four categories of investment:

- (1) domestic, e.g. UK, probably extended to include Eire,
- (2) wider economic community, e.g. EEC,
- (3) 'stable' external communities, e.g. North America, Australia,
- (4) others, e.g. South American republics.

Categories (1) and (2) will not normally involve formal political or financial control on the movements of funds. Category (3) will often involve financial controls on international transfers and these may be imposed at both 'ends' – by the UK and by the overseas territory. Such controls are usually on the export of currency – e.g. the UK system of exchange controls and the premium currency market – but will also often be on import. Controls on the import of currency will be imposed, for example, as a means of attempting to limit the influence of overseas investors on a domestic economy, e.g. Australia.

Such controls on currency remittance will usually derive principally from economic considerations, and category (3) territories will be characterised by reasonably stable political systems and relationships. In the category (4) territories, currency controls will be at least as much political as economic in origin. The political systems in category (4) territories may seem to be, in UK terms, unstable and the political relationships between the UK and such territories will usually be fairly delicate. Both these factors impose a vulnerability to expropriation, nationalisation, or at least interference in commercial activity which is not expected in the other three territorial categories.

Of course, it is essential to recognise the realities of a changing situation and individual countries will change category. For example, the 'old' Commonwealth would – some years ago certainly – have been category (2), but some of these (e.g. Australia and perhaps South Africa) are now in category (3) and others (e.g. Pakistan and Sri Lanka) probably now in category (4). France was until recently certainly in category (3), but since the UK entry into EEC should presumably now become category (2).

The point of this categorisation is that it may help to define those related undertakings which should be consolidated under the test of ability to control the flow of funds for the benefit of the ultimate shareholders. The 'flow of funds' would include, for example, remittance of revenue and capital profits

and also additional resources to protect assets. Categories (1) and (2) will normally clearly pass this test. Category (3) will also usually do so, but will require careful consideration, particularly in the context of International Accounting Standard No. 3, paragraph 36: 'A subsidiary should be excluded from consolidation if . . . [it] operates under conditions in which severe long-term restrictions on transfer of funds impair control . . . over [its] assets and operations'. This will probably be the case with the majority of subsidiaries operating in category (4) territories. Annual review and assessment of the various circumstances surrounding each overseas subsidiary should be undertaken to ensure that correct consolidation criteria are being applied.

Conclusion

Present practice in the UK is sometimes criticised on the basis that subsidiaries are too frequently excluded from consolidation on grounds which may be invalid. The limited evidence available, for example the table quoted above extracted from the ICAEW *Survey of Published Accounts 1975*, suggests that the incidence of non-consolidation is relatively slight – arising in under 10% of cases there observed. There may, however, be significant cases of unhelpful non-consolidation of the financial figures for undertakings which are not within the present UK definition, but which would be caught by amended criteria of 'control' and 'availability'.

There is also a contrary view to the effect that there may be too many cases where a true and fair view of group accounts is distorted by the erroneous consolidation of subsidiaries. It is suggested that subsidiaries should not be consolidated where they are neither effectively controlled by the group, nor can their income or assets be made freely available to the participants in the parent company. More searching consideration of the validity of consolidation in the context of the true and fair view of accounts for those participants would be helpful in reducing the incidence of such anomalies. The existing UK legislative framework might be considered adequate for that review, but amendment of legal criteria to stress these criteria of 'control' and 'availability' would be helpful.

The approach to the definition of parent and subsidiary contained in the EEC draft Seventh Directive on Company Law would, I believe, be helpful in reducing the present number of anomalies and difficulties. Perhaps it is right that we in the UK should revise our traditional approach to consolidated accounts at the same time as the relevance of and need for them is gaining international recognition.

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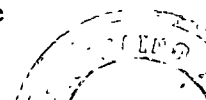
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EEC, UEC, ASC, IASC, IASG, AISG, ICCAP-IFAC, Old Uncle Tom Cobbleigh and all

P. N. McMonnies

ASSC*, IASC, AISG and UEC seemed, at one time, to spell CONFLICT. This, at any rate, was the view taken by the writer in the spring of 1974, when he introduced the topic to the Edinburgh Wednesday Forum. The Forum, be it said, is a discussion group of accountants drawn from all sides of the profession, and meets once a month in the winter to consider, usually with considerable argument, matters which seem to it to be currently important. The present paper is based upon one, with a very similar title, presented to the Forum. That paper foresaw possible conflict as a result of proliferation of accounting requirements by an increasing circle of 'legislating' bodies. Its forebodings have not in fact come to pass, but the Editor has been kind enough to suggest that the topic, brought up to date, might interest readers of this journal.

Let it be clear at the outset that though this paper is critical of the present rule-making scene, the criticism is not directed at the bodies concerned or their individual members. On the contrary the writer believes that such bodies have done remarkably well within the constraints imposed upon them. The criticism is rather of the environment, and the thoughts that follow constitute a plea that the surrounding circumstances be considered very carefully before the profession pushes further along a road which could ultimately lead to its own demotion.

Seeds of conflict

In March 1974, the International Accounting Standards Committee (IASC) had just issued its first Exposure Draft on 'Disclosure of Accounting Policies'. The Councils of the British bodies were nearing approval of (if they had not already approved) three further Statements of Standard

Accounting Practice to add to the three already issued. In the United States the Financial Accounting Standards Board (FASB) had published its first (fairly innocuous) Statement, and more (probably less innocuous) were expected, though, of course, the Accounting Principles Board (APB) had been issuing requirements for some time. Other bodies throughout the world (notably in Australia, Canada, New Zealand and South Africa) had been busy exposing proposals for standards to be used in their own countries. The *Union Européenne des Experts Comptables Economiques et Financiers* (UEC) had issued its first Recommendation, which was also on the subject of accounting policies, and that body was thought to be working towards the issue of a second Recommendation. There was thus a great deal of activity within the accountancy profession designed to produce rules for the way in which financial information had to be reported and to exhort or even to compel the members of the recognised accountancy bodies throughout the world to adopt them.

In addition to this activity on the professional front, the UK, as a new member of the European Economic Community (EEC), was faced with the introduction into British law of a number of proposals by the European Commission, which could not fail to have repercussions on the way in which companies reported to their shareholders and to other interested parties. In particular, there were the draft second, third, fourth and fifth directives in the company law series and the proposed regulation for the *Societas Europaea*. All these potential pieces of legislation were liable, even if amended to fall more into line with British thinking, to cause changes in our disclosure habits and to upset some of our existing accounting conventions.

On the European scene there was also the *Groupe d'Etudes des Experts Comptables* (Accountants' Study Group). Its function was (and still is) to monitor the

*Now the ASC.

draft EEC legislation, but there were fears that it might itself become a rule-making body by issuing accounting standards under that legislation when enacted.

Another factor mentioned in the original paper was the Accountants International Study Group (AISG), a body set up to compare accounting practices in Canada, the UK and the USA. It had already published a number of interesting papers, and was pertinent because it was tending to make suggestions as to what 'best practice' ought to be. Accordingly, in considering the bodies with influence on trends in financial reporting, it could not be overlooked.

In the activities of these various bodies the seeds of conflict were evident. Fortunately, as the result of a lot of hard work on the part of the leaders of the profession in the UK and elsewhere, the seeds have not germinated, or, if they have, the resultant plants have been speedily plucked out. This, of itself, is a heartening indication that, even though the profession may have started itself off on a slippery slope, it does not intend to lose its equilibrium. We shall look again at the slippery slope later, but let us first consider the current situation on the 'rule-making' front, so far as it affects the UK.

Current position

At the time of writing the Councils of the British and Irish bodies have issued eleven Statements of Standard Accounting Practice, which (with two exceptions) have to be complied with by their members or non-compliance justified. They have also issued four Standards promulgated by IASC, under roughly equivalent conditions, with one more due any minute. Fortunately the two sets of Standards where they cover the same subject, do not conflict though they may diverge to some extent.

AISG has issued eleven Studies dealing with accounting matters, many of which contain suggestions for bringing practices in the three nations closer together. UEC has produced only the one 'Recommendation', which also does not conflict with the equivalent British standard. The proposals emanating from these two bodies are not mandatory. They can, however, be considered persuasive if national standards are silent.

The European Commission's draft directives (particularly the fourth and the recent seventh dealing with consolidated accounts) indicate the sort of requirements which UK financial reports are going to have to comply with, but not yet. They are, however, perhaps the most disturbing element in the situation at present, because in some respects they indicate a direction different from that taken or likely to be

taken by UK or international accounting standards. However, this is not really a source of conflict: the European requirements will become the law and therefore must prevail. The question for the profession is what it can do to bring that law as closely as possible into line with other requirements.

The accounting front, however, is not the only one where rules, regulations, requirements or recommendations are being brought forward. The Councils of the UK accountancy bodies have issued statements on auditing. These so far have not had the same force as SSAPs, but auditors disregard them at their peril. An Auditing Practices Committee has been set up under the Consultative Committee of the Accountancy Bodies (CCAB), which will presumably put forward suggestions to the Councils for auditing standards: this will introduce a new element into the rule-making. UEC has switched its interest from accounting 'Recommendations' to auditing 'Statements', of which six have appeared in draft form during the past year or so. These again are persuasive rather than mandatory, but UEC is seeking the co-operation of member organisations to make them more effective. IASC has not so far entered the auditing field, but there is no reason to think that it will not do so if necessary. Five of the AISG studies have dealt with auditing matters. EEC's fifth directive is greatly concerned with auditing.

Ethical matters are also attracting attention. The UK bodies have published an ethical guide, and UEC has also issued one statement in this area. More are likely to be forthcoming from various directions. For example, two new sets of letters come into the picture, ICCAP and IFAC; the former is expected shortly to become the latter (to give them their full titles, the International Co-ordination Committee for the Accounting Profession and the International Federation of Accountants). This world body has indicated that it intends working in the ethical field and will doubtless produce guidance documents of some kind.

Another subject which is going to interest ICCAP/IFAC is accounting education. It also interests the individual UK bodies, the Advisory Board for Accounting Education (ABAE)*, UEC and EEC. There too we can expect requirements to emerge.

At the time the Wednesday Forum considered the topic the main fear was that the individual accountant, in whatever walk of life, might be faced with conflicting requirements, particularly on the financial reporting front. Given the goodwill and

*This has now become the Accountancy Education Consultative Board (AECB).

commonsense which have prevailed, this no longer seems so likely. The biggest danger now is that he will drown in a sea of documentation, rushing down on him from all quarters and dealing with all kinds of professional topics. The poor man will be hopelessly confused, hopelessly out of touch or hopelessly out of pocket (paying 'back-room boys' to work out what he really ought to be doing). The prospect is not one that can be viewed with equanimity, although it parallels the general situation in the UK where more and more legislation is churned out to be understood and complied with because of its quantity and complexity by less and less of the population.

That, however, will not do on the accounting and auditing front. If there are rules, they have to be complied with or something unpleasant is likely to happen. Let us first consider whether there is any escape from accounting and auditing standards (to which areas we shall confine the rest of this paper). Should there be? Are there other viable alternatives? Well, there are certainly two of the latter, the 'chart of accounts' approach (as we may call it) or the now outmoded 'freedom of choice'. We deal in the following paragraphs with these possibilities and try to assess their effects.

Accounting standards

We have already seen that the formulation of accounting standards, on a national, continental and international scale, is definitely the 'in' idea. Why this should be so is not too obvious except on a superficial level. Admittedly the large variety of alternative accounting treatments usable when framing financial reports has been a source of embarrassment to the profession on occasions in the past. It is understandable that there should be moves to reduce the alternatives. But American experience with the Accounting Principles Board, followed by the FASB, does not fill one with enthusiasm that promulgating statements of standard practice is the panacea for all the profession's ills. The SSAPs so far issued in Britain and Ireland, and the various exposure drafts of proposed statements, do nothing to dispel a feeling that the process is a 'brush fire fighting' activity, which could eventually lead to contradictory or illogical practices. It has been suggested that 'The Corporate Report' was an attempt to set out some sort of framework for integrated standards. It may be, but it is suspect because of being inadequately researched.

The idea of one standard treatment is only good if the standard does not have to be followed slavishly, but whoever departs from it has to say so, and why, and what the financial effect is (with an assumption

that departure will not be all that uncommon). Departure should not attract audit qualification if such explanation is given. A criticism against the FASB's pronouncements and the ASC's proposals is that, like charts of accounts (which we discuss below), they are arbitrary. They are the choice of one alternative (or sometimes more) from among several, and the reason for the particular choice is not always clear. Even if clear, it does not always appear logical, and there is no basis of theory which explains why one particular treatment is right in one particular circumstance. *Pace* 'The Corporate Report', unless a lot of research is done to establish a fundamental framework for financial reporting, standards will always be 'rule of thumb' and therefore unacceptable to some people.

A further point of difficulty about standards promulgated by the accountancy profession itself is their acceptability to non-members of the profession. We make it very clear that we stand by what our company law says, namely that the responsibility for a company's accounts lies firmly with the directors. So the directors have some justification for commenting: 'You tell us it's our responsibility: why should you then tell us how we must do it?' To this we really have no answer at present. If we had some clear theory, based upon logic, which we could cite, we might have a leg to stand on, but we haven't.

Charts of accounts

Of course, as Professor C. E. M. Joad might have said, it all depends what you mean by standards. Some construe the term as meaning that accounts shall be presented in a 'standard' form using 'standard' procedures to arrive at it. Then standards get very close to the 'chart of accounts' idea. A 'chart of accounts', favoured in some European countries, provides a framework of the profit and loss account and of the balance sheet, which is strictly laid down, as are the rules to tell you into which 'slot' you put each item of financial data. In its most extreme form it tends to reduce 'accounting' to a mechanical process, calling for thorough knowledge of the appropriate rules and very little else – certainly not much judgement. The proposal contained in the draft EEC fourth directive tends in this direction, but does not take it to extreme lengths.

This method of reporting has a certain attraction because (in theory) all business entities are showing their assets, liabilities and results in the same way, using the same bases. You can, therefore, compare one entity with another in the belief that you are comparing like with like. For national statistics this is marvellous: the economists and the statisticians

concerned know that the figures on which they work all come out of the same pigeon-hole. That the way in which they reach that resting place may be nonsensical for part of the population is neither here nor there. In fairness, however, it has to be admitted that the countries which have adopted charts of accounts do not pretend that they show a 'true and fair' view of, or 'present fairly', the information about the businesses. They are arbitrary; they present the position of the business 'in accordance with the law'.

It is perhaps permissible to deviate here for a moment and glance at one of the objections of the British accountancy bodies to the original version of EEC's draft fourth directive. The British view was that the overriding requirement should be for the accounts to show 'a true and fair view' and that the form of presentation should be subsidiary to this. Most people on this side of the Channel would agree with that stance. But why insist on 'true and fair'? We all know only too well that it is a concept meaning many things to many men, and it does not even have a statutory definition to support it. A number of much abler writers than the present one have pointed out the imprecise and possibly misleading character of the term which rather unexpectedly we seem to have foisted on the EEC, and some continental writers and speakers have not been slow to notice this. While the point we are trying to make is probably right – at any rate according to our lights – it seems a pity that we have not made it on a firmer base. While perhaps not ideal, the suggestion by the AISG of 'fair and reasonable' seems to have more to commend it than 'true and fair'.

The major argument against charts of accounts, apart from arbitrariness, is their inflexibility. Enshrined in law, they are much more difficult and much slower to change than standards laid down by the profession itself. As accounting is not a static affair (though some would question whether it may properly be described as 'dynamic'), there must be new ideas introduced, there must be experimentation, there must be research. All of which is eminently difficult when faced with a rigid, legally-enforced framework. It has been said (probably with justification) that the answer is that those faced with charts of accounts just do not obey the law. But of what use is a law that is constantly ignored?

Personal choice

An alternative to the above approaches is the 'personal judgement' school, which favours leaving it to boards of directors (guided by their accountants, one would hope) to decide the practices which will best com-

municate the states of affairs of their companies. The proponents of this approach argue that no two businesses are *exactly* alike and that any attempts to make them report alike are based on a false premise. This is the opposite argument to that of the 'standard practice' proponents, who say that unless companies report alike you cannot compare them in order to judge their performance and standing.

We shall probably not be given the opportunity to explore this approach much further. We have followed it in the past, and it has become discredited – not necessarily because it was the wrong course to follow but because some people, wittingly or unwittingly, have fouled it by their behaviour and because we, the profession as a whole, have not explained clearly enough to those who rely on us exactly where we were trying to get. So the clamour now, throughout the world, is for 'standardisation'. In addition, we have to face the fact, as we have seen, that there is a European tendency towards even less flexibility than is granted by the application of standard accounting practices.

Nevertheless, the fact that legislation or the pronouncements of influential bodies do not favour personal choice in deciding the appropriate accounting treatments for individual economic happenings should not prevent us fighting for it if we think it is right. Expediency often pays off in the short run but is regretted at a later stage. So we should not dismiss the personal judgement approach merely because we think we may not be allowed to use it.

The principal argument in favour of it is that every business entity is unique and thus two absolutely identical transactions by different entities will not necessarily have identical effects for each. Each entity has to look at its own activities and decide the way in which they must be recorded in financial terms in order to present a fair picture of what has happened. Does the argument hold water? We might conclude that the answer is 'only partly'.

No one will deny that there is a world of difference between, for example, running a travel agency and building ships, between a farm and a chain of supermarkets. But is there all that difference between individual travel agencies, individual shipbuilders, individual farms, etc? Of course there is – difference of *situs*, difference of managerial skill, difference of technical ability, difference of financial structure, and so on. But whereas trying to make the travel agent and the shipbuilder account exactly alike will not, in fact, result in anything truly comparable, trying to do so for travel agents as a class and for shipbuilders as a class may be helpful. The differences between individual entities, when they apply the same conventions, will be shown up in financial terms

and this ought to provide readers of the relevant accounts with the comparative information they need. In other words, equivalent treatments under circumstances that are not equivalent should show up just that and ought, other things being equal, to disclose which business entity is in the more favourable position.

Auditing standards

In the above discussion we have restricted ourselves to accounting requirements – deliberately. We in the UK have so far had little experience of mandatory audit requirements; in other words, so far as auditing is concerned, we are still virtually in the ‘personal choice’ era. CCAB has set up its Auditing Practices Committee (APC), and we have had one or two fairly innocuous pronouncements from the Councils of the interested bodies, which presumably emanate from that Committee. However, we can expect more in the future, but – and this is not an original thought – it is less easy to issue definitive requirements on auditing than on accounting. Additionally, such requirements will be more difficult to monitor.

It is, at any rate in theory, possible to say that for each and every audit you must carry out a number of specified steps. Or to require that certain minimum assurances are obtained. Whether doing so will really have any beneficial effect is difficult to judge: it may indeed influence the laggards but all good auditors ought to be ahead of the game. Auditing standards, or uniform audit procedures, strike the writer as being principally a cosmetic exercise, designed to disguise the warts that unavoidably appear from time to time.

Be that as it may, standards, rules, pronouncements, statements or whatever you like to call them, issued by authoritative national or international bodies have to be noticed by accountants in public practice. It is no use ignoring them and hoping that they will go away. Be unfortunate enough to be haled up in court and you will find the things being cited at you as the practice expected of a reasonably competent auditor.

The bodies concerned

We have noted the activities of the UK bodies – CCAB, ASC, APC. We have considered the European ones – EEC (and the Groupe d’Etudes) and UEC. We are aware of the effects, or possible effects, of the international ones – ICCAP, IFAC, IASC and AISG. We have not yet thought about the IASG of the title. One cannot help wondering whether, in this age of initials, someone thought up the name,

Inflation Accounting Study Group, just to see how many people got confused with AISG. At least one weekly publication successfully did so. However, IASG, which is a semi-autonomous offshoot of the Accounting Standards Committee, is the midwife of inflation accounting. In other words, it has tried to turn the proposals of the Sandilands Committee into something that can be adopted practically by reporting entities and, equally important, can be audited. Its Exposure Draft 18 will presumably, after due consideration (and amendment?), be adopted by the Councils of the British and Irish bodies and become an SSAP. So although IASG is another set of initials to bamboozle us for the time being it at least is not another rule-making body to which we shall have to look for years to come. At least, we hope not.

So where are we? The accountant in Scotland, England, Wales or Ireland has at present, on the financial reporting front, to give due attention to company legislation, Stock Exchange listing requirements, Statements of Standard Accounting Practice from within, and from outside a UEC Statement, some AISG studies and International Accounting Standards. He (or she) can look forward to the company legislation being altered as a result of EEC directives and to at least one EEC regulation with direct effect. On the auditing front there is the same sort of line-up, with IASC not yet in the field but the possibility that it or IFAC may eventually join the fray. Much of this rule-making lies at the profession’s own door. Proliferation of it is the slippery slope mentioned earlier in this paper. Is it desirable, even accepting the fact that the bodies concerned have so far succeeded in not contradicting each other? What worries the writer is that he can see no indication that the leaders of the profession think otherwise. The present paper is therefore an attempt to set out the position as it appears to be with a view to alerting to the possible dangers those who may not yet have given the matter much thought.

Conclusion

To sum up, while the preceding discussion possibly oversimplifies the problems with which the accountancy profession is faced, it does suggest that we should all stop and take stock before we allow ourselves to become inundated with pronouncements. Unless we do, we may find ourselves irretrievably committed to becoming ‘legislation-bound’. As a first step we ought to see if there is an acceptable theoretical basis for reporting financial data. (In this respect all the ‘research’ which the writer has seen published so far on the aims and objectives of financial reporting has been disappointing.)

It may be, of course, that there is no such theoretical framework. It may be that there is no valid theory to cover what is, after all, merely a vehicle of communication. It may be that, as with the grammar of the English language, it is an arbitrary decision whether (say) translated into financial terms it is right to split an infinitive (as in North America) or not (as in the UK). The trouble is, we do not know and our efforts to find out have so far been pathetically half-hearted. As a result, on a world-wide scale now we are liable to concentrate on choosing various 'grammatical rules' for accounting, while leaving ourselves no time or energy to find out how right we are in so doing. Already some of the rules seem to be starting to contradict each other. If we find a tenable theory, the road to follow will almost certainly be that of standards – but standards that can be fitted satisfactorily into the theoretical framework. Probably such standards will apply only to homogeneous entities, not to business as a whole. Moreover we shall have to decide who is going to set the standards – it is no use having a multiplicity of bodies all trying to do exactly the same thing. If the standards conform to acceptable theory, presumably common-sense will dictate that these can be adopted on a worldwide basis, and the need for national and regional practices will fall away. (But, of course, there is always politics.)

If there is no theoretical basis we can accept, then the road to follow is likely to be the one leading to a chart of accounts. In this case whatever we decide upon will be arbitrary anyway, and all that will matter is that everyone knows all financial reports are drawn up using exactly the same 'grammatical' rules.

This is surely better than allowing a 'free-for-all' with a variety of self-instituted 'ungrammatical' rules. 'Ah', but the reader objects, 'so long as the rules are disclosed why should there be complete standardisation?' The answer must be 'simplicity'. Since comparisons are going to be made, the data may as well be comparable at the outset without giving the trouble of making adjustments on the basis of additional information provided. Moreover, the more additional information that is given, the greater the consumption of time in giving it, in receiving it and in acting upon it and the greater the opportunity for error on somebody's part. Again, we shall have to make up our minds whose 'grammar' we are going to adopt. It can only lead to confusion if all kinds of different authorities force or encourage us to use their own special brand.

But pray that that arbitrary road is not the one we shall have to tread. If it is, it will lead to the demise of the accountant *qua* accountant.

The opinions expressed above are the writer's

own: they do not, so far as he is aware, reflect the view of any firm or body with which he is or has been in any way connected. Neither does he claim any particular originality, either in thought or material, but he is grateful to the members of the Wednesday Forum for their discerning consideration of the original paper, which undoubtedly has influenced the thinking in this one. As an example of other recent writings in this area a select bibliography is given below.

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Accounting Standards: a Pause for Reflection*

Pauline Weetman

The 1970's have brought a determined effort to raise standards of accounting practice in the United Kingdom. Future years must yield a critical appraisal of this work to ensure that the aims of a programme of accounting standards are being achieved, and are being achieved in the best possible manner.

Guidance on the thinking behind the series of standards produced by the Accounting Standards Committee is provided by the 'Statement of Intent on Accounting Standards in the 1970's' issued by the Institute of Chartered Accountants in England and Wales.¹ The Council's intention was stated therein to be that of advancing accounting standards along the lines of:

- Narrowing the areas of difference and variety in accounting practice;
- Disclosure of accounting bases;
- Disclosure of departures from established definitive accounting standards;
- Wider exposure for major new proposals on accounting standards;
- A continuing programme for encouraging improved accounting standards in legal and regulatory measures;
- Adequate support for and maintenance of standards.

This essay seeks to examine the extent to which these intended aims have been achieved. It also seeks to analyse criticism of accounting standards in order to establish whether such criticism is directed towards the general concept of establishing standards of accounting practice, or whether it is concerned with specific instances of implementation of these general aims. Analysis of the errors of the past is a necessary precursor to constructive future development. Finally the essay examines possible future developments of accounting standards in the United Kingdom.

Current problems in achieving the aims of the Statement of Intent

Narrowing the areas of difference and variety in accounting practice

While recognising the impracticability of rigid uniformity, the Council will intensify its efforts to narrow the areas of difference and variety in accounting practice by publishing authoritative statements on best accounting practice which will wherever possible be definitive (*Statement of Intent*).

According to the Oxford dictionary, 'definitive' means 'decisive, unconditional, final' and it is the definitive nature of accounting standards which has given rise to resentment among those required to implement such standards. Over-emphasis on adherence to the letter of accounting standards is giving the impression that the directors of some industrial companies are acting incorrectly, or less than perfectly, in departing from definitive accounting standards when they may in fact be giving what they believe to be the truest and fairest picture of their business operations.

The problem facing such directors is illustrated in the case of Tate and Lyle by the defence of the 'base stock' method of valuing stock, presented by the finance director of that company. He claimed that the issue of Statement of Standard Accounting Practice No. 9, 'Stocks and Work in Progress', had prompted Tate and Lyle to

criticise an inflexible attitude which must lead to misleading results for companies operating in volatile commodity markets. . . . Tate and Lyle feels that full disclosure of inventory valuation methods must better suit all those concerned with the company's performance than the insistence on one basis of valuation for all types of business.²

It might be claimed that there is benefit in forcing such discussion into the open, but the practice of

*ALIA Prize Essay

¹Statement of Intent on Accounting Standards in the 1970's, Institute of Chartered Accountants in England and Wales, 1969.

²D. W. Hardy, 'In defence of "base stock"', *Accountant's Magazine*, May 1976, pp. 181-182.

issuing a definitive standard means that those who choose to deviate from the recommended practice are placed in the inferior position of defending their views rather than being afforded the privilege of joining the discussion as equals.

The situation also conflicts with Statement of Standard Accounting Practice No. 2 – 'Disclosure of Accounting Policies':

The significance of accounting bases is that they provide limits to the area subject to the exercise of judgement, and a check against arbitrary, excessive or unjustifiable adjustments where no other objective yardstick is available. By definition it is not possible to develop generalised rules for the exercise of judgement, though practical working rules may be evolved on a pragmatic basis for limited use in particular circumstances.³

There is no indication that Tate and Lyle acted in an arbitrary, excessive or unjustifiable manner and yet there is no way of distinguishing between their deviation from the prescribed standard and the kind of flagrant non-compliance which standards were designed to prevent.

Another example of criticism of this aim of narrowing the areas of difference and variety in accounting practice can be seen in the Chairman's Statement published in the 1975 Annual Report of Bowater:

Over the last few years the accounting profession, particularly the United Kingdom bodies, has promulgated a number of statements of standard accounting practice. Most of these statements have been concerned with the finer details of accounting for the results of commercial enterprises rather than with fundamental reappraisal of the measurement of economic activity by reference to the real meaning of such activities.

Up to now we have, in our accounts, broadly accepted and adopted these standard practices, whilst not necessarily in full agreement with them. This year, however, we have decided to take our exception to these standard practices a stage further and to decline to reflect one of them because it appears to us to be inappropriate in attempting to show a true and fair view.

The chairman goes on to explain that the company made no deduction in respect of excess advance corporation tax as part of the taxation charge for the year, and explains the reasons for this action. He does however indicate support for the concept of accounting standards and mentions support for the concept of some standard of current cost accounting. His objection appears to be one of disagreement with

points of detail rather than one of criticism of the general concept of improved accounting standards.

These two examples of criticism voiced by leading United Kingdom companies indicate that there is a danger that in its concern to narrow the areas of difference and variety in accounting practice, the Accounting Standards Committee may have gone too far towards the extreme of imposing rigid standards of practice. There is ample evidence from the discussion contained in the standards themselves that this was not the intended outcome of definitive accounting standards, but it is the result in practice. Some stigma attaches to non-compliance with accounting standards because of the requirement to mention such deviation in the auditors' report, even in the case where the auditors agree with the departure from a definitive standard. The desire to avoid such stigma could motivate companies to comply with an accounting standard when it might not provide the most appropriate manner of presenting a true and fair view.

Disclosure of accounting bases

The concept of disclosure of accounting bases appears to be the least controversial aspect of accounting standards, and disclosure of accounting bases is now a regular feature of annual reports. In the 'Accountancy Age' list of qualified audit reports received for the year 1976, there is no evidence that any auditor qualified an audit report because of failure to comply with Statement of Standard Accounting Practice No. 2 on 'Disclosure of Accounting Bases', although there is a growing number of 'going-concern' qualifications to audit opinions which could result from the standard's stated presumption that the going-concern concept has been observed in the absence of a clear statement to the contrary.

On the question of greater disclosure in general, criticism is appearing over the volume of information to be made available. This criticism is evidenced in the special foreword to the 1975 annual report of Guest Keen and Nettlefolds, where the company reaffirms its willingness to disclose information but expresses doubts that it is possible or desirable to include information to satisfy all needs in one annual report:

GKN is very much in sympathy with the disclosure of more information in company reports provided that the information is relevant and meaningful. . . . Many of the accounting standards tend to be drawn up more on a theoretical than on a practical basis, and much of the additional information suggested is of very limited use, and only to particular sections of the public. Apart from these considerations, the cost – in time and money – of providing information is very great.

³Statement of Standard Accounting Practice No. 2, 'Disclosure of Accounting Policies', November 1971.

Similar sentiments are expressed by BOC International in a foreword to their 1976 annual report:

Last year whilst applauding the growing demand for company reports to be more informative, we remarked on the paradoxical obscurity of such reports resulting from the rules and regulations which had been laid down in an endeavour to ensure reasonable uniformity between companies of different sizes and characters.

No one would pretend that the reader's task has become any easier. In compiling this report we have had to take into account the requirements of the law, the Stock Exchange, various standards of accounting practice and the interests of a great variety of readers. These include those who wish to invest in, purchase from, supply to, be employed by, or do other forms of business with BOC.

In the circumstances we cannot claim to have produced a clear and easily comprehended account of the fortunes of a Group of over 100 different companies, operating in more than 40 countries.

This indicates not so much criticism as resigned acceptance of accounting standards and the consequent increase in required disclosure of information, but at the same time it expresses doubt as to the benefit of the exercise. BOC's willingness to comply with professional standards is indicated in the directors' report where it is stated that the company proposes to change its method of valuation to comply with the requirements of Statement of Standard Accounting Practice No. 9 on stocks and work in progress, even although the method used at present has been found to be the most appropriate in the management decision-making process.

Although it has been accepted, in formulating standards, that disclosure is desirable, these comments show that there is some disquiet in industry as to the benefits gained from the provision of further information. Such criticisms lead to the question of whether the benefits and costs of the requirements of new accounting standards have been identified, even at the qualitative level. Those specifying particular items for disclosure or for more detailed accounting treatment must ensure that they expect the disclosure to satisfy a need, and that the benefit to society of the extra information required exceeds the cost to society of producing it.

Some indication of the profession's awareness of this problem was provided in the memorandum submitted by the Consultancy Committee of Accountancy Bodies to the Department of Trade in response to the government discussion paper 'Aims and scope of company reports'. The CCAB in its memorandum of November 1976 made a distinction between disclosure requirements for larger companies and those

for smaller companies, and made the point that a widened responsibility to disclose information should not lead to a corresponding legal right for all to receive that information. Greater provision of freely available information means that more members of society obtain a benefit for which they have paid nothing, but which has imposed some cost on some section of society. This theme of the costs and benefits of accounting standards is developed in a later section.

Disclosure of departures from established definitive accounting standards

Accepting the existence of definitive accounting standards, criticism still exists over the method and extent of disclosure of departures from established standards.

A fundamental distinction exists between those departures from standard which are designed to mislead or to conceal relevant information, and those which are made in good faith in the interests of presenting what the directors regard as the truest and fairest picture. Such distinction should be preserved in the manner of disclosure of such departures from standard, but it is not apparent that this is happening at present.

Disclosure may be made in either or both of two places in the annual report – in the notes to the accounts and in the auditors' report.

Disclosure in the notes to the accounts is regulated by the Explanatory Foreword to Statements of Standard Accounting Practice:

Significant departures in financial accounts from applicable accounting standards should be disclosed and explained. The financial effects should be estimated and disclosed unless this would be impracticable or misleading in the context of giving a true and fair view. If the financial effects of departure from standard are not disclosed, the reasons should be stated.

Disclosure in the auditors' report is guided by the first joint Statement on Auditing:⁴

All significant departures from accounting standards made by the directors in preparing the accounts should be referred to in the auditors' report, whether or not they are disclosed in the notes to the accounts.

This auditing recommendation differs from the earlier Statement of Intent which said:

The Council will recommend that if disclosure of accounting bases or departure from definitive standards is not made in the accounts or notes

⁴Statement on Auditing No. 1, 'The Effect of Statements of Standard Accounting Practice on Auditors' Reports', February 1971.

thereto, appropriate reference should be made in the auditors' report.

It would be interesting to discover the cause for the change of emphasis on disclosure in the auditors' report. The view taken by the Statement of Intent would lead to much less frequent mention of departure from standard than is at present the case and would go some way towards meeting the criticism that the increasing incidence of qualified audit reports is devaluing the force of the qualified audit report.

It would also be valuable to be given some indication of the intention of the word 'significant' as used in the Explanatory Foreword. It is not clear from the context whether 'significant' is synonymous with 'material'. If the two words are different in meaning, some attention should be paid to the distinction between significance and materiality. If the two words are similar in meaning it seems unfortunate that a new word has been introduced when a considerable amount of thought has been devoted to the concept of 'materiality' in accounting and auditing.

The present situation appears to be that all departures from accounting standards are receiving mention in the auditors' report, irrespective of whether or not the auditor concurs with the directors' decision. This leaves the shareholder who reads the audit report in something of a quandary. What view should he take if he discovers from the notes to the accounts and the auditors' report that a definitive accounting standard has been broken and yet the auditor, after describing the departure from standard, expresses his agreement with the departure? He is left with a feeling related to that of reading the assurance in the cigarette advertisement that every packet carries a government health warning.

The accounting profession should consider revising its requirements so that auditors need only comment on a departure from standard if that departure is not disclosed in the notes to the accounts, or if the departure is disclosed but the auditors feel it is not justified. The practice of stating in the audit report those items with which the auditor is in agreement lengthens the audit report and acts against the recommendations of the Jenkins Committee on Company Law Reform in favour of a short form of audit report. The advantage which the Jenkins Committee saw in a short form of audit report was that a qualified opinion would be more readily discernible by reason of its length.

It may be that a more detailed audit report will be required in the United Kingdom in the future, but if the audit report is to be lengthened such action should be the result of a policy decision rather than of piecemeal addition of information as is occurring at present.

Wider exposure for major new proposals on accounting standards

The Accounting Standards Committee publishes exposure drafts on accounting standards and invites comments on these before producing the definitive statement of standard accounting practice. It is to be expected that at the exposure draft stage there will be a high level of criticism and discussion, as a result of which amendments will be made to satisfy a wide range of thinking in the profession. Such criticism at exposure draft stage is an indication of wide awareness and concern for high standards.

This procedure can be seen to have failings if controversy continues after the definitive standard has been published. Such a situation occurred in the case of publication of Statement of Standard Accounting Practice No. 11 on 'Deferred Taxation', which caused pressure to be brought to bear on the Accounting Standards Committee by the Committee of London Clearing Banks, the Confederation of British Industry and the British Insurance Association, in a stand supported by a major accounting firm. The Confederation of British Industry, in a memorandum to the Accounting Standards Committee, saw compliance with SSAP 11 resulting in an increasingly artificial situation for the vast majority of companies. They added that it was important that accounting practices should not fall into disrepute as a result of failure to take a realistic view on practical matters of business life.

This criticism was sufficiently strong to make the Accounting Standards Committee postpone the date on which SSAP 11 would become effective, in order to allow time for a review of the principles and methods of accounting for deferred taxation set out in the standard. The inclusion of a section on deferred taxation in Exposure Draft 18 on 'Current Cost Accounting' allowed the Accounting Standards Committee to revise its views on deferred taxation without appearing to have backed down as a result of pressure.

The controversy over SSAP 11 should have taken place at a much earlier stage, and it indicates that either exposure for new proposals is not made sufficiently wide or that those who receive exposure drafts do not pay sufficient attention to them.

In defence of the Accounting Standards Committee it should be pointed out that some controversial exposure drafts have been re-written. On 'Research and Development', Exposure Draft 17 replaced Exposure Draft 14 after representations by interested parties, while a long period of consultation and consideration preceded the issue of the standard on 'Stocks and Work in Progress'.

It might be helpful if the Accounting Standards

Committee were to publish greater detail of the discussion which led to the formation of an accounting standard, so that the names and opinions of contributors could be made known. It would then be easier to decide whether any apparent lack of consultation arises through apathy on the part of those who should be taking part in the formulation of accounting standards, or whether it arises through the Accounting Standards Committee's unwillingness to give adequate weight to the views expressed by those who are expected to implement accounting standards.

The preface to Exposure Draft 17 on 'Research and Development' is a welcome step in this direction in acknowledging that the Accounting Standards Committee accepted representations that a standard requiring all development expenditure to be written off as incurred would be too rigid.⁵ It says:

A considerable body of opinion has emerged during the exposure period to the effect that in certain industries (particularly aerospace and electronics) many projects are in hand at any one time in respect of which the theoretical case for carrying the expenditure forward could be evidenced. In these circumstances the Accounting Standards Committee is persuaded that a standard accounting practice which requires all development expenditure to be written off as incurred would be too rigid.

A continued programme for encouraging improved accounting standards in legal and regulatory measures

There is little criticism in general of the stated aim of submitting proposals in the area of company law reform and in the areas of the City Code on Takeovers and Mergers or Stock Exchange Listing requirements.

The Council of the Stock Exchange expects accounts of listed companies to be prepared in accordance with Statements of Standard Accounting Practice and international accounting standards. It further expects that significant departures from standards or non-compliance with standards will be disclosed and explained.

In encouraging improved accounting standards in legal measures, the accounting profession could run some risk of losing control of its own practices. At present the aim of the profession is to minimise regulation by the state, achieving the necessary level of discipline by voluntary means. Legal regulation of business activity may introduce unnecessary rigidity because it is easier to introduce new measures than to dispose of redundant ones under such a system. Also, as will be discussed later, it is doubtful that there

would be any overall benefit from increased government control of accounting practice.

One question which could be considered is whether the United Kingdom accounting standards should be enforced by law, as in Canada, or whether voluntary self-regulation should be made more effective. A suggested scheme to achieve the latter aim is made in a later section.

Support and maintenance of standards

The Council will do all in its power to assist and support members in the observance of established standards. To this end, it intends to strengthen its machinery for investigating and pointing the lessons of lapses from standards (*Statement of Intent*).

Here may be found another area of criticism of the early years of accounting standards. Where is the machinery specified? Taking a lesson from another area of business activity, it may be noted that the first 'Notes for Guidance on Amalgamations of British Businesses' were published in 1959 at the instigation of the Governor of the Bank of England, but it was not until 1968 that the Takeover Panel was established, and only in 1969 was the Panel given powers to enforce the City Code. The Panel has demonstrated its value in a consultative capacity as well as showing the ability to discipline offenders where necessary. Must there be a similar delay of ten years before a Panel on Accounting Standards is established?

Support for a Panel on Accounting Standards comes from a former president of the Institute of Cost and Management Accountants, Mr. Alex Farquharson. He spoke, in his final speech as president, of the lack of support for those who are expected to implement accounting standards and pointed to the dilemma facing the member of a professional institute who is required by his employer to prepare financial statements which do not accord with an accounting standard. Such an advisory panel would help accountants facing this kind of conflict between professional ethics and business realities.

Future developments

Based on the foregoing analysis, some possible directions for future developments in the United Kingdom will now be suggested.

Establishment of a regulatory body

Assuming that improved accounting standards are desirable in principle, although not necessarily in their present rigid form, a regulatory body will be required to administer and enforce these standards.

Such a regulatory body may be statutory or may be

⁵'Research and Development', Exposure Draft 17, *Accountant's Magazine*, April 1976, pp. 128-130.

achieved by voluntary action. The United Kingdom could follow the example of the United States in establishing a body similar to the Securities and Exchange Commission, but such a drastic step seems unnecessary in view of Professor G. J. Benston's comparative analysis of the control of accounting information in the United States and the United Kingdom.⁶ He shows that the peer review provided by the professional accountancy bodies in the United Kingdom on an informal basis is much stronger than in the United States. In the United Kingdom a professional accountant must belong to one of the recognised accountancy bodies in order to practise his profession, particularly auditing, in full, while in the United States certified public accountants are certified and disciplined by their respective states and are not necessarily members of the American Institute of Certified Public Accountants (although the majority are). This means that some CPAs are not obliged to follow the dictates of the AICPA and, unless they audit the accounts of a client subject to the requirements of the Securities and Exchange Commission, are not required to conform to the requirements of that body either. In the United Kingdom, apart from the greater control exercised by the accountancy profession on practising accountants, other private agencies act in a regulatory capacity, such as the Stock Exchange Council and the Takeover Panel.

There is little evidence that in the United States fraudulent practices were a problem before the creation of the Securities and Exchange Commission, or that the incidence of fraudulent statements has been significantly reduced since. Professor Benston concludes that the benefits of the American system are not appreciably greater than those of the British system, while the costs are considerably higher.

It may be concluded from such findings that a voluntary regulatory body for accounting standards should be instituted in the United Kingdom. Such a body could be similar in constitution to the Takeover Panel, including representatives of the major accountancy bodies and possibly of other users of accounting information.

Such an Accounting Panel would act in an advisory capacity as well as in a disciplinary capacity, and could have a full-time executive seconded from professional and industrial practice to give advice on problems connected with implementation of accounting standards. Disciplinary procedures already exist in the individual accountancy bodies and could be standardised if necessary to include private censure, public censure, fines, or expulsion.

It could be found that as a result of the advisory service provided the number of objections to accounting standards and consequent disregarding of them could be reduced so that there would be relatively few cases requiring disciplinary proceedings, as has been the case with the Takeover Panel.

Unless the accounting profession establishes such a regulatory mechanism in the near future it runs the risk of losing the initiative in favour of legislative control, as can be seen in the recent suggestion that the Department of Trade be empowered to use Statutory Instruments in prescribing the contents of company reports. In view of the likelihood expressed by Professor Benston that statutory control would impose greater costs without appreciably greater benefits, the accountancy profession has a duty to society to establish a regulatory body which removes the need for government control.

Continuing review of existing standards

Methods of financial accounting evolve and alter in response to changing business and economic needs. From time to time new accounting standards will be drawn at progressive levels, and established standards will be reviewed with the object of improvement in the light of new needs and developments (*Explanatory Foreword to Statements of Standard Accounting Practice*, June 1973).

It might be expected that after several years of accounting standards some defects would have become apparent and review of established standards would have taken place. The only tangible evidence of such review lies in the statement on 'Earnings per Share', revised to allow for changes in the basis of taxation in the United Kingdom and for the issue of further Statements of Standard Accounting Practice.

One of the earliest standards, 'Accounting for the Results of Associated Companies', was the subject of detailed criticism in *The Economist*⁷ which demonstrated the weakness of this standard in that:

- (1) dividend control has undermined the thinking on associate accounting;
- (2) a move above or below a 20% or a 50% holding can radically alter the picture when the change in the company's real financial position is marginal;
- (3) it leaves scope for changing from one basis of valuing the investment to another according to the state of the stock market.

The Economist suggests that such weaknesses have been compounded by the unwillingness of auditors to consider the spirit as well as the letter of the

⁶G. J. Benston, *Corporate Financial Disclosure in the UK and the USA*, Saxon House, 1976.

⁷'Standardised Accounting', *Economist*, March 13, 1976, pp. 168-169.

standard, and illustrates this view with specific examples. Statement of Standard Accounting Practice No. 1 is recommended by *The Economist* as being ripe for reconsideration by the Accounting Standards Committee.

One possible direction for future development of accounting standards would therefore appear to be a continuing review of existing standards with the aim of ensuring that such standards are still relevant and are expressed in the best possible manner. Such a review function could be carried out by the Accounting Panel already suggested. This review would be similar to the amendment of the City Code on Takeovers and Mergers by the City Working Party, or the amendment of the Listing Agreement by the Stock Exchange Council. The review would be a natural extension of the disciplinary and advisory work of the Accounting Panel.

Accounting education

One of the greatest dangers of definitive standards in accounting lies in an area which has received relatively little comment in the literature. There is a real possibility that the establishment of definitive accounting standards will create an accounting creed which will be imparted to students in a mechanistic manner. It will become more important than ever to ensure that students learn to reason from established principles, and that they examine accounting standards as only one possible outcome of such reasoning processes. Students must show the ability to contrast one outcome with another and to decide on the attributes of different methods which make them appropriate to different circumstances.

An example of the possible doctrinaire approach to accounting education which could develop is afforded by considering Statement of Standard Accounting Practice No. 10, 'Statements of Source and Application of Funds'. It would be relatively easy to present students with the recommendations of the standard and to illustrate the technique of preparing such a statement while at the same time asking students to read the Explanatory Note which prefaces the statement as preparation for an essay or an examination question. It is much more difficult to lead students through the processes by which the present standard evolved, but if they are not encouraged to take exploratory steps in discovering existing standards, students will never be equipped to formulate new standards to meet future requirements.

If standards are to be revised and strengthened, students must be capable of criticising constructively. Blind acquiescence in established standards will retard development, possibly to a greater extent than if no definitive standards existed. As an example,

consider the Explanatory Note to SSAP 10 which states:

The funds statement will provide a link between the balance sheet at the beginning of the period, the profit and loss account for the period and the balance sheet at the end of the period.

Students should ask themselves how this sentence is to be reconciled with the example appended to the Standard which applies the term 'Increase/decrease in working capital' to a figure which numerically cannot be reconciled with the increase or decrease in working capital shown by comparison of the opening and closing balance sheets. They should consider whether this is a minor inconvenience to be borne in the interests of improved provision of information, or whether it is such as to destroy the user's confidence in the financial data presented.

Students of accounting must have a clear grasp of accounting principles and of the problems which have led to the establishment of accounting standards, but they must see such standards as presenting one from a range of possible solutions. They must be equipped with the critical powers necessary to make judgements on current accounting practice, to identify future problems and to suggest possible solutions to these problems.

Cost-benefit analysis

The Statement of Intent on Accounting Standards did not attempt to enumerate the benefits of publishing definitive accounting standards and it did not identify the associated costs. There appears to be an implied assumption that raising professional standards through imposing upon members the requirement to adhere to published directions must be beneficial and that the associated costs are less than the benefits or are immaterial. The provision of further accounting information redistributes wealth from existing shareholders, who bear the cost of providing such information, to a wider group of persons which benefits from the information and which may or may not include the existing shareholders.

Professor G. J. Benston has applied cost-benefit analysis to government requirements for accounting disclosure in the United States and the United Kingdom.⁸ He identified the benefits presumed to derive from government regulated financial disclosure as:

(1) satisfying government responsibility for enforcing the contract between shareholders and directors of a company. A benefit may be conferred on society if government regulation to enforce such

⁸See note 6 above.

contracts reduces the disruption caused by lawsuits between shareholders and directors;

(2) ensuring fair treatment for all investors by requiring that all investors receive adequate information at the same time and in the same manner. This may reduce shareholders' petitions to government for redress of unfair treatment;

(3) protection of those who are not shareholders but who deal directly with the company, such as creditors and employees. The benefit is assumed to derive because it is less expensive to prevent or reduce damage to such persons than to attempt remedies once harm has been done;

(4) more efficient allocation of resources because adequate financial disclosure will encourage the flow of resources into companies where the return for investors, commensurate with risk, is greatest;

(5) cheaper government administration and cheaper acquisition of information required for the good of society may be achieved by requiring such information to be made available publicly rather than having to ask for such information directly;

(6) prevention of a scandalous or politically unacceptable situation arising through inadequate disclosure. It might be more costly to society to correct such a situation than it would have been to ensure through adequate disclosure requirements that it did not arise.

Professor Benston summarises empirical investigation of these matters and concludes that the disclosure required by government could confer a benefit on society by enforcing more efficiently the implied contract on the part of management to maintain a fiduciary relationship towards shareholders, creditors and employees. Such disclosure requirements also give auditors more adequate powers in protecting the property rights of shareholders. He found that there was little evidence to support the view that required disclosure benefits investment decisions but that there is a mass of statistical evidence showing that share prices are not significantly affected by changes in accounting disclosure requirements.

Although there may be benefits from such disclosure requirements, they would still not be justified unless they exceed the costs of implementation. In identifying the costs of additional information requirements, distinction must be made between the information which a company would provide to shareholders in the absence of regulation and that which it provides only because required to do so by government regulation. It is the cost of this additional information which is the relevant cost.

The direct costs of required disclosure are the additional costs of record-keeping, secretarial work, auditing and preparation and distribution of reports

which the company could otherwise have avoided. The indirect costs are contained in the time spent by officials of the company on the preparation of extra information which could otherwise have been spent on alternative activities, while the company may also incur costs through delay in publishing information leading in turn to delay in the raising of finance for a feasible project or to an unwelcome takeover bid.

Benston concluded from his analysis of the costs and benefits of government-required information that the benefits were in many cases doubtful, and that it was very probable that the costs of providing extra information exceeded the benefits obtained.

A similar cost-benefit analysis could be applied to the information required by professional accounting standards. The direct and indirect costs of implementing accounting standards could be estimated by the companies concerned. They might even give some qualitative assessment of other costs which cannot be so readily evaluated. It would only be relevant to consider the information which companies provide because of the existence of an accounting standard and which they would omit in the absence of that accounting standard. To the extent that they would in any case comply with the requirements stated, there is no extra cost to the company and no extra benefit to society from the imposition of a standard.

In examining the benefits to be gained from accounting standards, it could be assumed that the action taken by governments in ensuring social good is at present inadequate and that the actions of the Accounting Standards Committee will increase social welfare along the lines already identified. Alternatively it could be assumed that the aims of providing accounting standards are to benefit selected groups in society. Such groups could be existing shareholders; potential investors; creditors and employees; the accounting profession.

The benefits to existing shareholders have been discussed already in terms of enforcing the contract between management and shareholders and in making more effective the stewardship function of management and auditors. The benefits to potential investors lie in making available information at a reduced cost or at no cost to themselves, but as mentioned already there is little evidence that increased disclosure requirements have an appreciable effect on investor decisions as reflected in share price movements. The benefits to creditors and employees could be evaluated on a qualitative basis by a questionnaire approach to these persons or their representatives, asking their reaction to specific items of accounting disclosure. The benefits to the accounting profession lie in reduced litigation or other action in respect of professional negligence, and in greater respect for the

profession in the eyes of the public. This could also be a benefit to society if less time is spent on legal disputes and if society has greater confidence in the reliability of published financial information.

Such a cost-benefit analysis would be subjective, but would at least create some greater awareness of the benefits and costs of accounting standards and would begin to provide some response to the questions raised in the extracts from the annual reports of Guest Keen and Nettlefolds and of BOC International.

Conclusion

Accounting standards have been criticised by representatives of industry, the press, city institutions and accounting firms. The Accounting Standards Committee cannot ignore this body of criticism in considering the direction which future standards will take.

The criticism is directed not at the concept of accounting standards expressing the high standards expected of members of professional bodies, but at the manner in which standards have been imposed. In its anxiety to narrow the areas of difference and variety in accounting practice, the Accounting Standards Committee has moved too far towards extreme rigidity, and future accounting standards must steer a middle course if they are to gain universal acceptance and respect.

Industrial companies have shown willingness to disclose information in the public interest but are reacting unfavourably to the growing size of the annual report, and this must be considered when new standards are being formulated.

Analysis must be made of the benefits and costs of providing information to satisfy accounting standards, in order to ensure that there is a net benefit to society or to a defined group of persons.

The accountancy profession must make positive moves towards voluntary self-regulation by establishing a regulatory body to administer accounting standards and to apply disciplinary measures to those

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who deliberately disregard such standards. At the same time the main rôle of this regulatory body would be to act in an advisory capacity in order to improve communication between the accountancy profession and industry.

The auditors' report should not have to refer to departure from accounting standards if the auditor is satisfied with the reasons for such action. This provision, together with a more understanding attitude engendered by the existence of a consultative panel, would reduce the incidence of qualified audit reports which at present threatens to devalue the audit report and reduce the impact of accounting standards.

Accounting education must ensure that students are equipped with an adequate grasp of accounting principles and the ability to reason from such principles to quantified conclusions, so that accounting standards will be developed and revised in an enlightened atmosphere and will not impose a stifling influence on accounting practice.

It would be extremely undesirable to risk any action which would bring the whole concept of accounting standards into disrepute. Flexibility and communication should be the theme for the development of accounting standards in the years ahead.

Walter Taplin Prize

The Association of University Teachers of Accounting and the Council of Departments of Accounting Studies offer an annual prize of £10 for the best article published in Accounting and Business Research. The prize is named in honour of the journal's founding editor, Walter Taplin.

The winning article is chosen by the subscribers. Their choice in 1975/76 was K. P. Gee and K. V. Peasnell, *A Pragmatic Defence of Replacement Cost* (Autumn 1976).

The Relative Predictive Ability of Three Accounting Income Models

Dale A. Buckmaster, Ronald M. Copeland and Paul E. Dascher

The problem of selecting the proper measuring unit for financial accounting appears to be the primary concern of the leading accounting groups that establish accounting practices in both the United Kingdom and the United States. In May, 1974, the Accounting Standards Committee issued Provisional Statement of Standard Accounting Practice No. 7 [21] which recommended that general price-level statements be included as supplemental information in published annual reports. The British government Committee on Inflation Accounting subsequently issued a report (Sandilands Report) in September, 1975, that recommended financial statements based mainly on replacement cost. [51] Furthermore, the Committee recommended that the replacement cost statements be the only published accounts. The Accounting Standards Committee has recently added its support to replacement cost accounting. In an exposure draft (ED 18) published in late 1976, the Committee recommends that all but very small businesses change to replacement cost reporting by 1980.

A surprisingly similar situation exists in the United States. Despite the recognisable preference of the Securities and Exchange Commission (SEC) for income determination using replacement cost as the measurement base, the Financial Accounting Standards Board (FASB) issued an exposure draft of a reporting requirement that would require general price-level adjusted financial statements to be reported as supplemental information in published annual reports [7]. The SEC countered with its own exposure draft that requires the information necessary to compute replacement cost income as a supplement to regular historical cost financial statements [19]. In March, 1976, the SEC made it mandatory for certain firms under their jurisdiction to report the information described in the Exposure Draft. Those firms that must disclose the information are those with inventories, gross property, plant, and equip-

ment (before accumulated depreciation and amortisation) greater than \$100 million and those assets greater than 10 percent of total assets [18].

The group issuing the most recent FASB documents concerning price-change accounting very carefully avoids taking a position that supports any specific measurement base. This group, the Task Force on a Conceptual Framework for Financial Accounting and Reporting, defines four variations of price-change accounting that may be considered for financial reporting and indicates that it is not a 'foregone conclusion' that any one of the methods will be adopted [8, pp. 16-19].

Unfortunately, there currently exists no widely accepted evidence of relative merit among historical cost, general price-level adjusted or replacement cost measurement of accounting income. Arguments as to the superiority of various accounting measurement bases have appeared frequently in accounting literature for the past 30 years and the volume of this literature is now overwhelming. However, little progress has been made in establishing the relative merit of proposed measurement bases. Much of the failure to progress towards resolution of the problem may be attributed to two closely related factors: (1) most criteria for the evaluation of accounting alternatives are not easily testable, and (2) there has been little empirical testing of accounting choices relative to the specific criteria that are testable.

Myron Gordon recognised this problem several years ago and proposed the following very pragmatic criterion:

The criterion that should be used in choosing among principles is the *minimization of stockholder bias in extrapolating past income to estimate future income*. For instance, if historical cost results in greater errors in historical income as an estimate of future income, than current cost, the latter is a superior basis of valuation [11, p. 260].

The criterion, while controversial [12] [14] [17],

appears to test for one of the dimensions of usefulness to a large segment of practising financial analysts.¹

There have been two previous studies specifically applying the criterion to price-change income measurement. Unfortunately, the results of the tests are conflicting. This study represents an extension of the previous studies in order to attempt to reconcile the evidence produced in earlier studies.

Specifically, in this study, the relative predictive ability of historical cost operating income, general price-level adjusted operating income, and replacement cost operating income are tested for 42 companies in four industries. The test period is the 20-year period ending with 1969. The predictor models are first, second, and third order exponential smoothing and simple least squares regression.

The two previous studies utilising the Gordon criterion to evaluate the relative predictive ability of price-change income were conducted by Werner Frank [9] and Simmons and Gray [20]. Frank used the income prediction criterion to evaluate historical cost operating earnings and earnings data reflecting the effect of specific price changes (replacement cost income). The results of this study of 76 firms in six industries indicate '... that no clear advantage seems to exist for reporting current-cost [replacement cost] income rather than accounting income ...' [9, 133]. In general, where Frank found statistically significant differences in the average error of predictions, historical cost data resulted in less prediction error.

¹Lev [13] points out that anticipated earnings is an input common to most stock valuation models. Most of the academic objection to the Gordon criterion is based upon the position that the relevance of the income series being predicted to such models is unknown. However, since the publication of the important critical papers [12] [14] [17], the outcome of certain empirical studies suggests that the differences in 'relevance' of the three income models being studied may not be important. Both Peterson [16] and Brooks and Buckmaster [5] have found that the rank order of firm income is not affected significantly by the choice of any of the three income models. Also, Brooks, Buckmaster, and Dascher [2] found that, in general, the correlation of stock prices with firm income obtained from each of the three models is not significantly different. Thus, except for predictability, there appears to be little difference in the 'relevance' of the three income models for stock valuation decisions. Furthermore, within the context of portfolio theory, each security is evaluated on the basis of its contribution to the riskiness of the portfolio. Although there is some conflicting evidence [10], earnings volatility is 'believed to be positively associated with the firm's risk' [13, p. 204]. Multi-period tests of predictability such as the tests in this study contribute to the identification of the most appropriate income time-series for risk evaluation since the tests minimise the impact of spurious, short-run income changes. Thus, the income series with the greatest predictive power will also tend to be the best series for risk evaluation.

Simmons and Gray [20] used a simulation study to investigate the relative predictive ability of alternative income models over a 20-year period for each of four combinations of both replacement cost and general price-level adjusted income. The results show that general price-level adjusted income is the best predictor for two of the price change combinations while replacement cost income and historical cost income were each the best predictor for one of the remaining two price change combinations. These conclusions seem to conflict with the findings of the Frank study.

The current study

The current study modifies and extends previous research. A more current test period – 1964 to 1969 – is used and all three income models – historical cost, general price-level adjusted cost and replacement cost operating income – are compared. Also, tests are included in this study to determine if the predictive ability of the income models varies among industries. This extension is incorporated into the study because studies of other aspects of price-change income provide evidence that the impact of incorporating price-changes into income measurement process varies among industries [2] [3] [5]. Another interesting extension of previous research is the inclusion of sensitivity tests. Tests are conducted to determine if relative predictability is sensitive to changes in the rate of price-change.

The Sample. Forty-two companies from four randomly selected industries are used as the experimental sample. All companies within an industry for which data is available in *Moody's Industrial Manuals* are included in the study.² These firms and industries are identified in Appendix I.

Methodology for Obtaining Price-Change Income. The methodology illustrated in the FASB *Exposure Draft* [7] is used to determine the general price-level adjusted operating income data for each of the firms. The replacement cost income calculation requires replacement values of inventories and depreciable assets for each of the 42 companies. Since this information is not available, surrogate data are obtained. Inventory values are obtained by applying the specific Wholesale Price Index appropriate for a particular industry to the historical cost inventories. The Implicit Price Deflator for the Non-residential Business Investment Component of Gross National

²Standard and Poor's Compustat tapes were used as the data base in Frank's study; however, there is evidence that the pre-1973 tapes contained a substantial size bias [6]. Most of this size bias is eliminated by using *Moody's Industrial Manuals* as the data source.

Product is used for all of the depreciation adjustments required for the replacement cost computations.³

The primary problem in applying both the general price-level index and the specific indexes arises when determining the acquisition dates of inventories and depreciable assets. Since the assumed time of acquisition of FIFO, LIFO, and average inventory methods affects results, three adjustment procedures are necessary for inventories. FIFO inventories are restated by: (1) determining for each year the inventory turnover period in months; (2) applying the average price for the last inventory turnover period of the year to the inventories; or in those cases where the price at the end of the year is lower than the average price, applying the end of the period price in order to obtain a lower cost or market inventory valuation.

For LIFO inventories, the primary problem is to acquire a series of acquisition dates for the LIFO layers. The first step in determining the dates of acquisition of a layer is to determine how many months' purchases are represented by an inventory increase. This, in turn, is used to select the appropriate index numbers for both specific price changes and general price-level adjustments. Where there is a decrease in inventory, appropriate deductions are made from the most recently acquired layers.

The method used to adjust average cost inventories relies upon the assumption that the ending inventory of a year reflects the average prices for that year. Thus, the adjustment for average cost inventories is:

$$\begin{array}{l} \text{Adjusted} \quad \text{Reported} \\ \text{beginning} = \text{beginning} \\ \text{inventory} \quad \text{inventory} \\ \times \frac{\text{Index Number of December of Current Year}}{\text{Index Number Reflecting Average Price Change During Previous Year}} \\ \text{Adjusted} \quad \text{Reported} \\ \text{ending} = \text{ending} \\ \text{inventory} \quad \text{inventory} \\ \times \frac{\text{Index Number for December of Current Year}}{\text{Index Number Reflecting Average Price Change for Current Year}} \end{array}$$

In general, the procedure for adjusting depreciation is as follows:

1. Estimate the date of acquisitions of gross depreciable assets by:

(a) Determining an average date of acquisition for the assets owned at the beginning of 1951. The following equation is used for this purpose:

$$\text{Number of years ago the assets were acquired} = 1/2 \times \frac{\text{Gross Fixed Assets}}{\text{Depreciation for 1951}}$$

This provides a date that can be applied to the gross assets at the beginning of the test period. Assume, for example, that a firm has gross depreciable assets of \$1,000,000 at the end of 1950 and \$100,000 depreciation in 1950; then this computation provides an estimated average age of the assets of five years and the average acquisition date is estimated as 1946.

(b) For each year in the test period, the total of depreciation and any decrease in assets represents an estimate of retirements during that year. These estimated retirements are then subtracted from earlier years' acquisitions using the FIFO assumption. Continuing with the example in (a), assume that at the end of 1951, gross assets are \$1,100,000. Then, since gross assets increase rather than decrease, the estimated retirements during 1951 are limited to the depreciation charges, or \$100,000. Thus, the estimated 1946 acquisitions are reduced to \$900,000 (\$1,000,000 cost less \$100,000 depreciation).

(c) The acquisitions for each year in the test period are estimated as the sum of depreciation plus the net increase in gross assets. This would make the estimated acquisitions during 1951 in our example equal \$200,000 (\$100,000 depreciation plus \$100,000 increase in gross assets). Then the estimated dates of acquisition of the gross assets at the end of 1951 are:

Estimated 1946 acquisitions:	\$900,000
Estimated 1951 acquisitions:	200,000
Total gross depreciable assets:	\$1,100,000

2. Obtain adjusted gross fixed asset value by applying the appropriate index numbers to the asset layers. In the case of the general price-level adjustment, the appropriate index numbers are obtained by dividing the final overall GNP Deflator for the current year by the average Overall GNP Deflator for the year the layer originated. For the replacement cost adjustment, the GNP Deflator for Non-residential Business Investment is substituted for the Overall GNP Deflator.

3. Obtain a composite depreciation rate from the

³A more detailed description of the methodology used to obtain price-change income numbers is contained in: Brooks, LeRoy, and Dale Buckmaster, 'Technical Appendix: The Impact of Price Changes on Accounting Income'. A copy of this appendix is available upon request from: Bureau of Economic and Business Research, University of Delaware, Newark, Delaware 1971.

ratio of cost basis depreciation to gross fixed assets at cost.

4. Multiply the adjusted gross fixed assets by the composite depreciation rate. The resulting number is either general price-level adjusted depreciation or replacement cost depreciation, depending upon which index is used to adjust gross depreciable assets.

Predictor Models. Measures of predictive ability are sought through comparisons of actual operating income with periodic predictions of operating income for each of the sample firms under each of the three income models. A 13 year pretest period – 1952 to 1964 inclusive – is used to isolate and select the 'best' predictor model for each firm in the sample. The 'best' model is defined as the one with the smallest standard error of the estimate. For each firm, the model selected during the pretest is used to make projections during the test period. Therefore, the selected model is used consistently for each company during the test period, but because selections vary among companies, no single model is applied consistently within an industry.

The predictor models which are considered and pretested are: (1) least-squares linear regression, (2) first-order exponential smoothing (a constant function), (3) second-order exponential smoothing (a linear function with a constant growth factor) and (4) third-order exponential smoothing (a quadratic function). These models are explicitly defined in Appendix II.

Also, the best of 16 smoothing constants (alpha levels) are iteratively selected for each model for each company.⁴ Therefore, during the pretest period, 64 alternatives – four models, each with 16 smoothing constants – are evaluated for each company to select the best combination of predictor model and smoothing constant.

Analysis and results

Overall predictive ability. The best predictor models are used in conjunction with the actual data of each company to generate *ex post* valuations for each of the three income models. Thus, historical cost data are used to forecast historical cost income, general price-level adjusted income to forecast general price-level income, etc. *Ex ante* income measurements for the firms consist of actual income data reported under each of the three income models, obtained using the calculation methodology described previously. *Ex post* and *ex ante* income measurements

of the same series are compared to measure predictive ability.

Differences in relative size among firms can affect the comparability of absolute error measurements. Therefore, a comparable base is sought through a ratio approach by using the mean absolute error as a measure of difference between the *ex post* and *ex ante* valuations. The mean absolute error is defined as:

$$\sum_{i=1}^5 \left| \frac{\text{Actual Income}_i - \text{Estimated Income}_i}{\text{Actual Income}_i} \right| \div 5$$

where $i = i^{\text{th}}$ year of the test period.

An error measure is calculated for each of the 42 companies for income measured under each of the three income models. Appendix I presents the mean absolute errors of each company included in the sample and Table 1 provides a summary of the comparison of the errors for every company in the sample. On the basis of this data, we can rank the predictive power of the three income models over all companies in the sample as: 1. historical cost, 2. replacement cost, and 3. general price-level adjusted historical cost.

Table 2 reports the outcome of the application of the sign test to the summary data reported in Table 1. Note that there is a very small probability that our rankings of predictive ability for all companies could have occurred by chance. This outcome supports the Frank study in that it indicates that historical cost is the best predictor of itself and conflicts with Simmons and Gray's study in that this study indicates that general price-level adjusted income is the weakest of the predictive models.

Differences among industries. Industry classification has had an overwhelming impact on the outcomes of other price-change studies that have given explicit recognition to potential impact of industry effects in the testing process. Therefore, we have extended our tests to determine if the income model with the lowest prediction error is different among industries. Table 3 provides a summary of the number of companies by industry that have a given income model with the lowest prediction error. When exponential smoothing is used as the predictor model, more companies in three industries have historical cost income with the lowest prediction error and more companies in one industry have replacement cost with the lowest prediction error. With regression as the predictor model, more companies in two industries have historical cost income with the lowest prediction error and more companies in the other two industries have replacement cost with the lowest prediction

⁴The alpha levels that are tested are : 0.5, 0.45, 0.4, 0.333, 0.3, 0.2, 0.1, 0.05, 0.55, 0.65, 0.7, 0.75, 0.8, 0.85, and 0.9.

TABLE 1

Results of prediction of future values of three income measures from past values of the same series using mean absolute error as the error measure

		Number of Observations an Income Model is the Better Predictor		
Income Models Compared	Total Observations	Historical Cost	Replacement Cost	General Price-Level
Smoothing:				
Historical Cost and Replacement Cost	42	29	13	0
Historical Cost and General Price-Level	42	35	0	7
Replacement Cost and General Price-Level	42	0	29	13
Regression:				
Historical Cost and Replacement Cost	42	22	20	0
Historical Cost and General Price-Level	42	34	0	8
Replacement Cost and General Price-Level	42	0	29	13

error. Notice that, whereas the better of historical cost or replacement cost seems to be a function of industry, general price-level adjusted income is apparently an inferior predictor in all industries.

In order to determine the statistical significance of the industry differences, the Kruskal-Wallis one-way analysis of variance is applied to the measured error for each industry. Table 4 reports the outcome of this test. The results of the tests are difficult to interpret; but, on the whole, the test appears to indicate that the best income model varies among industries.

Sensitivity to rates of change of the price indexes. The final group of tests to be reported is the tests to determine the sensitivity of the relative predictability to changes in rates of price-change. Nine comparisons of relative predictive ability are made among the income models for the set of assumed price-change

rates.⁵ The three rates of price-change tested for each comparison are: (1) one-half the actual rate of price-change; (2) one and a half the actual rate of price change; and (3) twice the actual rate of price-change.

⁵The comparisons are: (1) Historical cost and replacement cost with the replacement cost of long-lived assets varied; (2) General price-level and replacement cost with the replacement cost of long-lived assets varied; (3) Historical cost and replacement cost with the replacement cost of inventories varied; (4) General price-level and replacement cost with the replacement cost of inventories varied; (5) Historical cost and replacement cost with both the replacement cost of inventories and long-lived operating assets varied; (6) General price-level and replacement cost with both the replacement cost of inventories and long-lived operating assets varied; (7) Historical cost and general price-level with the general price-level varied; (8) General price-level and replacement cost with the general price-level varied; and (9) General price-level and replacement cost with all costs varied in the same direction.

TABLE 2

Results of application of sign test to differences in prediction error -- predictions of same series

Comparison	Better Predictor	Significance of the Mean Absolute Error	
		Smoothing	Regression
Historical Cost and Replacement Cost	Historical Cost	0.05	ns
Historical Cost and General Price-Level	Historical Cost	0.01	0.01
Replacement Cost and General Price-Level	Replacement Cost	0.05	0.05

ns indicates a lack of significance at the 0.05 level.

TABLE 3
Summary of best predictor models for each industry

Industry	Historical Cost	Number of Companies for which an Income Model Provides the Best Predictions			Total in Industry
		GPL	Replacement Cost	Ties	
Smoothing as predictor model :					
Cement	10	2	0	0	12
Metal Fabricating	4	1	5	0	10
Specialty Cleaning	9	1	3	1	14
Textiles	4	1	1	0	6
	<u>27</u>	<u>5</u>	<u>9</u>	<u>1</u>	<u>42</u>
Regression as predictor model :					
Cement	8	1	3	0	12
Metal Fabricating	4	1	5	0	10
Specialty Cleaning	5	2	7	0	14
Textiles	4	0	2	0	6
	<u>21</u>	<u>4</u>	<u>17</u>	<u>0</u>	<u>42</u>

TABLE 4

Kruskal-Wallis one-way analysis of variance applied to the industries to determine if the income model yielding the lowest prediction error varies with the industry.
Mean absolute error is the error measure

	Comparison		
	Historical Cost and Replacement Cost	Historical Cost and General Price-Level	Replacement Cost and General Price-Level
Smoothing as predictor model:			
Squared Sum of the Ranks in the Industry/ Sum of the Observations for the Industry:			
Cement	1,657	2,552	4,447
Metal Fabricating	6,554	7,398	5,061
Specialty Cleaning	9,206	7,638	5,246
Textiles	3,585	2,774	4,004
H	13.52	6.22	2.48
p >	.01	.10	.30
Regression as predictor model:			
Squared Sum of the Ranks in the Industry/ Sum of the Observations for the Industry:			
Cement	3,536	5,043	5,504
Metal Fabricating	6,917	6,200	5,051
Specialty Cleaning	8,650	7,545	4,608
Textiles	659	1,534	3,602
H	2.33	6.03	2.33
p >	.50	.10	.50

With one exception, the sensitivity tests indicate that the relative predictive ability of the income models is not sensitive to the magnitude of the rates of price-change. The one exception occurs when inventory replacement costs, alone or in combination with long-lived operating asset replacement costs, is varied and general price-level changes are kept at the actual rate. As the rate of change of replacement costs increases, the replacement cost model decreases in relative predictive ability when compared to both of the other two income models. However, the relative predictive ability of the replacement cost model does not seem to be sensitive enough to the rate of price changes to negate any conclusions resulting from the tests of intra-industry or overall predictive ability.

Implications of the study

Perhaps the most important implication of the study relates to the tests for the impact of industry characteristics on relative predictive ability. The outcome of these tests supports previous studies that have given explicit recognition to the potential industry effects on comparisons of price-change income models. The total evidence, which is supplemented by the outcome of this study, suggests that the relative merit (or impact) of alternative accounting income models should be studied on an industry basis.

Our tests indicate that historical cost is the best predictor of future numbers of that same series with replacement cost a somewhat less effective predictor of itself. However, both of these models are consistently superior to general price-level adjusted income. This outcome may, in part, be accounted for by two factors. First, the superiority of historical cost may exist because the historical cost numbers may have been subjected to artificial smoothing (the income smoothing controversy). Also, the predictive inferiority of general price-level adjustments may result because it lacks two important elements of the other models. The process of making general price-level adjustments may eliminate any artificial smoothing effects contained in the historical cost model. Also, the replacement cost model appears to have lead indicators not obtained with general price-level adjustments. Our tests further suggest that, regardless of the underlying nature of predictive differences, predictive ability is relatively insensitive to changes in the rate of change of prices in an inflationary period.

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APPENDIX I

Companies included in the sample with their mean absolute error

	SMOOTHING			REGRESSION		
	<i>Historical Cost</i>	<i>Current Value</i>	<i>General Price Level</i>	<i>Historical Cost</i>	<i>Current Value</i>	<i>General Price Level</i>
SIC 3241, Cement, Hydraulic:	%	%	%	%	%	%
Alpha Portland Cement Co.	175.8	364.9	434.2	153.3	246.0	350.8
American Cement Corp.	144.7	205.1	196.9	19.7	20.2	23.2
The Flintkote Co.	29.5	34.8	58.4	17.5	19.9	19.4
General Portland Cement Co.	43.4	48.4	53.4	26.9	26.8	28.8
Ideal Basic Industries, Inc.	33.7	38.7	39.8	13.3	15.0	15.2
Kaiser Cement & Gypsum Co.	43.6	44.6	41.4	17.1	18.0	17.8
Lehigh Portland Cement Co.	247.2	299.3	107.9	38.0	34.4	42.7
Lone Star Cement Co.	21.2	24.8	35.5	9.1	7.7	8.2
Marquette Cement Mfg. Co.	78.0	92.0	116.1	42.2	44.9	46.4
Medusa Portland Cement Co.	13.0	16.4	26.5	8.0	7.8	7.7
Missouri Portland Cement Co.	33.8	36.3	41.3	5.3	6.4	6.3
Penn-Dixie Cement Corp.	69.5	79.7	81.9	53.7	58.4	61.6
SIC 2542, Metal Partitions, Shelving, Lockers and Office and Store Fixtures:						
Alan Wood Steel Company	80.1	74.2	86.1	53.6	48.1	15.8
Clark Equipment Company	23.4	21.6	25.1	32.8	31.7	35.0
Dichold, Inc.	20.7	19.7	19.9	25.8	25.1	26.0
Emhart Mfg. Co.	15.8	20.7	20.3	26.9	30.8	31.1
General Fireproofing Co.	108.1	134.8	124.0	61.7	72.8	69.4
Gray Manufacturing Co.	240.8	33.1	26.9	124.6	38.7	40.4
Kysor Industries Corp.	38.9	35.9	40.3	62.0	61.4	62.0
Lyon Metal Products, Inc.	21.9	24.0	25.9	35.8	36.9	37.4
Massey-Ferguson	22.2	17.5	22.5	20.7	14.0	19.3
Westeel Products, Ltd	44.2	78.6	75.1	59.3	99.6	95.3

APPENDIX I (Continued)

	SMOOTHING			REGRESSION		
	Historical Cost	Current Value	General Price Level	Historical Cost	Current Value	General Price Level
SIC 2842, Specialty Cleaning, Polishing and Sanitation, Preparations, except Soap, and Detergents:						
Allied Chemical Corp.	34.1	39.5	40.5	43.8	58.2	55.2
Chemway Corporation	139.0	167.0	678.5	145.1	205.9	720.6
Detrex Chemical Ind., Inc.	36.2	38.3	35.9	38.2	37.2	38.0
Diversey Corp.	25.0	26.8	29.7	33.9	32.1	33.7
Dow Chemical Co.	99.0	99.0	99.0	35.6	36.2	37.1
Economics Laboratory, Inc.	21.7	21.6	86.2	35.8	36.4	70.2
Hercules Powder Co.	13.0	14.5	19.6	16.6	17.1	20.1
Minnesota Mining and Mfg. Co.	70.6	70.1	70.2	33.1	32.7	33.4
National Service Ind., Inc.	24.2	24.9	25.5	32.5	31.9	33.1
Petrolit Corporation	9.6	8.2	9.8	12.1	11.8	14.7
Chas. Pfizer & Co., Inc.	18.1	18.3	23.6	20.5	18.8	24.8
Purex Corporation, Ltd.	21.4	21.5	29.9	25.7	24.8	24.4
Sterling Drug Co.	11.8	16.1	14.5	20.9	20.9	20.3
West Chemical Prod., Inc.	12.7	13.5	17.3	20.0	19.4	21.8
SIC 2281, Yarn Spinning Mills, Cotton, Man-Made Fibers and Silk:						
American Thread Co. Inc.	23.7	19.0	17.0	35.2	42.1	44.4
Avondale Mills	14.2	15.4	19.5	19.6	28.1	27.8
Burlington Mills Corp.	20.0	19.9	20.3	19.2	18.8	20.3
Chemcell Limited	13.6	14.7	19.8	34.1	37.8	35.7
Cosmos Imperial Mills, Ltd.	73.7	225.4	101.4	119.8	394.7	212.2
Textiles, Inc.	58.6	62.6	64.5	58.5	57.8	60.1

Appendix II

Prediction Models used in Forecasting

(1) Regression model:

I_t = actual income for period t

F_t = forecasted income for period t

$F_{t+1} = a + (I_t)b$, where the parameters a and b are determined from a simple, least-squares regression based on the thirteenth year preceding F , through t for the dependent variable and 1947 through $t-1$ for the independent variable.

(2) First-order smoothing:

${}_1F_{t+1} = (I_t)\alpha + (1-\alpha)({}_1F_t)$, where:

I_t = actual income for period t ;

${}_nF_t$ = forecasted income for period t . The prescript n indicates the order of the smoothing model.

α = smoothing constant

(3) Second-order smoothing:

${}_2F_{t+1} = a_t + b_t$, where:

$a_t = {}_2S_t(x) - {}_2S_t(x)$;

$b_t = [\alpha/(1-\alpha)] [{}_1S_t(x) - {}_2S_t(x)]$;

${}_1S_t(x) = \alpha I_t + (1-\alpha){}_1S_{t-1}(x)$; and

${}_2S_t(x) = \alpha {}_1S_t(x) + (1-\alpha){}_2S_{t-1}(x)$, where

${}_nS_t$ = the smoothing function introduced in the n th order model.

(4) Third-order smoothing:

${}_3F_{t+1} = a_t + b_t + \frac{1}{2}c_t^2$; where

$a_t = {}_3S_t(x) - {}_3S_t(x) + {}_3S_t(x)$;

$b_t = [\alpha/2(1-\alpha)] [(6-5\alpha){}_1S_t(x) - 2(5-4\alpha){}_2S_t(x) + (4-3\alpha){}_3S_t(x)]$;

$c_t = [\alpha^2/(1-\alpha)^2] [{}_1S_t(x) - 2{}_2S_t(x) + {}_3S_t(x)]$;

and

${}_3S_t(x) = \alpha {}_2S_t(x) + (1-\alpha){}_3S_{t-1}(x)$.

Differences in Disclosure Needs of Major Users of Financial Statements

James J. Benjamin and Keith G. Stanga

The primary purpose of financial accounting is to provide information that will be useful in the making of economic decisions. There are many groups who use external accounting information for making such decisions. A partial listing of these groups includes financial analysts, stockholders and potential stockholders, bankers, bondholders and potential bondholders, employees and labour organisations, customers, suppliers and potential suppliers, tax authorities and regulatory agencies, social action groups, and the general public. As one might logically expect, these groups have different objectives. As a result, they may have diverse informational needs.

The traditional approach in financial accounting has been to provide a single general-purpose information set to a wide variety of information users. *APB Statement 4* states that 'the emphasis in financial accounting on general purpose information is based on the *presumption* that a significant number of users need similar information'.¹ (Emphasis added.) If the informational needs of the various user groups are highly similar, then the idea of providing general-purpose information is logically sound. On the other hand, if the needs of the groups are distinctly different, it will be difficult for one information set to satisfy the diverse user needs. As a result, information providers may wish to develop different information sets for each important user group.

At the present time, the major justification for issuing general-purpose information rests upon certain assumptions about the informational needs and decision processes of users. Unfortunately, neither the informational needs of users nor the rôle of corporate financial disclosures in the decision-making process are known with any degree of certainty. Consequently, a more complete specification of the informational needs of the various user

groups is necessary to determine whether general-purpose information sets are adequate.

To date, few attempts have been made to assess and compare the informational needs of various user groups. In 1970, Backer assessed the informational needs of two user groups by conducting in-depth interviews with a sample of bankers and financial analysts.² In a more recent study, Chandra used a questionnaire to examine the question of consensus between preparers (certified public accountants) and users (security analysts) on the importance of various information items in equity investment decisions.³ However, his study did not attempt to contrast the informational needs of different user groups.

In light of the limited amount of prior research, the objective of the study reported in this article is to compare the *perceived informational needs* of two groups who are primary users of external accounting information. The groups considered in this study are commercial bank loan officers and professional financial analysts.

Research methodology

To accomplish the objective as set forth above, the accounting and finance literature was extensively reviewed in order to gain insight into the informational requirements of these user groups. Based upon this review, a questionnaire was formulated. The questionnaire encompassed 79 kinds of information that bankers and financial analysts might need for decision-making purposes.

Most of the 79 information items selected for the questionnaire were gleaned from a careful review of many books and articles in the accounting and finance literature. In addition, some of the items

¹Accounting Principles Board, *Statement of the Accounting Principles Board 4* (New York: American Institute of Certified Public Accountants, 1970), p. 20.

²Backer, M., *Financial Reporting for Security Investment and Credit Decisions* (New York: National Association of Accountants, 1970).

³Chandra, G., 'A Study of the Consensus on Disclosure Among Public Accountants and Security Analysts', *Accounting Review*, October 1974, pp. 733-742.

resulted from a review of several recent annual reports of industrial companies. The following two criteria were used in selecting the questionnaire information items:

1. On an *a priori* basis, the information item must have at least *some expected importance* to informed users of external corporate information.
2. The information item must be either:
 - a. currently reported by at least some firms in their published annual reports, or
 - b. seriously offered by writers in the accounting and finance literature as a proposed extension in annual report disclosure.

The most valuable single source of information items was a comprehensive study reported more than a decade ago by Cerf.⁴

The bankers' questionnaire and the financial analysts' questionnaire consisted of a covering letter, a set of instructions, and the collection of 79 information items for the respondents to evaluate. The respondents were asked to judge the importance of each information item on a five-step numerical scale. Using the scale, a respondent could assign a value of 0 (unimportant), 1 (slightly important), 2 (moderately important), 3 (very important), or 4 (essential) to each information item. The importance judgements of the responding bankers were made within the framework of a term loan decision (maturity between 3 and 5 years). In contrast, the importance judgements of the responding analysts were made within the framework of a common stock investment decision, i.e., a decision to buy, sell, or hold a small (noncontrolling) number of a company's common shares. The bankers and the financial analysts were asked to make their decisions with reference to a publicly held industrial firm. Also, all respondents were instructed to assume that the dollar amounts of all information items were material or significant.

In total, 600 commercial bank loan officers and 600 chartered financial analysts were selected at random and asked to participate in the study. The loan officers were selected using the banking section of *Dun and Bradstreet's Million Dollar Directory*, while the analysts were selected from the current membership directory of the Institute of Chartered Financial Analysts. Of the 1200 questionnaires mailed, usable responses were received from 208 bankers and 207 financial analysts, an overall response rate of 34.6 percent.

We hypothesised that there was no difference between the perceived importance of information to commercial bank loan officers making a term loan

decision and the perceived importance of information to CFAs making a common stock investment decision. To test our overall hypothesis, we formulated a series of individual null hypotheses for *each* of the 79 information items included in the questionnaire, and we tested each hypothesis at a significance level of 0.05 using the chi-square test.

Results

The null hypothesis was rejected for 51 of the 79 information items included in the questionnaire. The mean values, importance rankings, and standard deviations for each information item for which the null hypothesis was rejected are shown in Table 1. The means for each item represent overall measures of the degree of importance that the respondents in each group assigned to that item within the context of a term loan decision or a common stock investment decision. Higher means, of course, are associated with higher degrees of importance. The means facilitated numerical rankings of the information items according to relative importance within each respondent group. The standard deviations for each item are measures of the variability in importance ratings assigned to the item within each respondent group. Larger standard deviations indicate that the respondents within a group are in less agreement regarding the perceived importance of an information item.

Table 1 also reveals the individual chi-square values and their associated significance levels (alphas) computed using the responses of the bankers and those of the financial analysts. Because of the relatively small number of 0 responses, the 0 and 1 categories were combined within each respondent group when computing the χ^2 statistics to ensure that the expected frequencies within the contingency tables would be large enough for the χ^2 test to be meaningful. For, as Siegel has pointed out, 'the χ^2 test is applicable to data in a contingency table only if the expected frequencies are sufficiently large'.⁵ The combining of two response values tends to make the test of significance slightly more conservative – that is, statistically it makes it even more difficult to reject the null hypothesis. However, since there were very few 0 responses, this technique would not be likely to have a material effect on the test results.

From the results presented in Table 1, it is apparent that the perceived informational needs of the two user groups are different for a majority of the questionnaire information items. The hypothesis

⁴Cerf, A. R., *Corporate Reporting and Investment Decisions* (Berkeley, California: University of California, 1961).

⁵Siegel, S., *Nonparametric Statistics for the Behavioral Sciences* (New York: McGraw-Hill Book Company, 1956), p. 109.

TABLE 1
Differences in informational needs of Bankers and Financial Analysts

Information Item	Subject Group				Analysts				Chi-Square ^b	
	Bankers		Subject Group		Analysts		Chi-Square ^b			
	Mean ^a	Ranking	Std. Dev.	Mean ^a	Ranking	Std. Dev.	Value	Probability ^c		
1. Comparative statement of retained earnings for the past two years	3-630(E)	1	.639	3-295(V)	11	.937	19-645	.000		
2. Historical summary of long-term debt for at least the most recent five-year period	3-558(E)	2	.603	3-464(V)	4	.775	7-880	.048		
3. Information on contingent liabilities	3-490(V)	3	.637	3-277(V)	12	.730	12-574	.006		
4. Historical summary of net sales for at least the most recent five-year period	3-481(V)	4	.702	3-621(E)	2	.721	14-310	.003		
5. Nature and dollar effects of all major accounting changes made during the past year	3-425(V)	5	.678	3-699(E)	1	.565	22-303	.000		
6. Projected earnings for the next fiscal year	3-330(V)	6	.721	2-558(V)	31	1-145	53-009	.000		
7. Amount of each subsidiary's earnings for the past year and the parent company's share of each amount	3-290(V)	7	.765	3-024(V)	19	.913	10-033	.018		
8. Information on major purchase commitments made by the company	3-279(V)	8	.754	2-869(V)	25	.831	28-279	.000		
9. Projected sales for the next fiscal year	3-241(V)	9	.749	2-612(V)	30	1-066	37-291	.000		
10. Historical summary of capital expenditures for at least the most recent five-year period	3-197(V)	10	.758	3-400(V)	6	.796	17-551	.001		
11. Summary of the ageing of accounts receivable at the balance sheet date	3-149(V)	11	.864	2-251(M)	43	.973	82-026	.000		
12. Information on major labour contracts	3-144(V)	12	.728	2-860(V)	27	.833	15-627	.002		
13. Current resale value of finished goods inventory	3-086(V)	13	.841	2-357(M)	40	1-109	52-579	.000		
14. Information on accounting methods in use when alternative methods exist	3-068(V)	14	.856	3-396(V)	7	.793	19-169	.000		
15. Names and addresses of major subsidiaries	3-067(V)	15	.849	2-053(M)	47	1-089	92-724	.000		
16. Names of company officers and directors	3-034(V)	16	.975	2-473(M)	37	1-144	28-134	.000		
17. Breakdown of total inventory into major categories	3-014(V)	17	.893	2-459(M)	38	.989	33-606	.000		
18. Historical summary of earnings per share of common stock for at least the most recent five-year period	2-952(V)	18	1-025	3-595(E)	3	.765	60-443	.000		
19. Backlog of product orders expressed in sales dollars	2-952(V)	18	.722	3-198(V)	14	.707	13-882	.003		
20. Market value of marketable securities	2-918(V)	20	.889	2-539(V)	32	1-028	17-818	.001		
21. Information on the major details of convertible securities outstanding	2-918(V)	20	.999	3-401(V)	5	.762	29-408	.000		
22. Current resale value of plant and equipment	2-903(V)	22	.919	1-860(M)	49	1-086	91-014	.000		
23. Breakdown of total plant and equipment into major categories	2-894(V)	23	.916	2-184(M)	45	.968	57-073	.000		
24. Information on policy to ensure continuity of management	2-885(V)	24	.872	2-354(M)	41	1-000	32-413	.000		
25. Brief narrative history of the company	2-884(V)	25	.958	2-188(M)	44	1-060	53-063	.000		
26. Amount of annual compensation paid to officers and directors	2-841(V)	26	.879	1-937(M)	48	.966	89-149	.000		
27. Historical summary of dividends per share of common stock for at least the most recent five-year period	2-817(V)	27	1-005	3-356(V)	8	.894	35-019	.000		
28. Information on major products sold by the company	2-813(V)	28	.905	3-121(V)	17	.848	15-346	.002		
29. Information on the major details of warrants or rights outstanding	2-803(V)	29	1-042	3-266(V)	13	.849	22-718	.000		
30. Information on the major details of stock issues outstanding	2-795(V)	30	1-013	3-193(V)	15	.898	19-424	.000		

TABLE 1 (Continued)

Information Item	Subject Group				Chi-Square ^b			
	Bankers		Analysts		Value		Probability ^c	
	Mean ^a	Ranking	Std. Dev.	Mean ^a	Ranking	Std. Dev.	Value	Probability ^c
31. Breakdown of expenses for the past year into fixed and variable components	2-779(V)	31	.916	2-517(V)	35	.999	12-809	.005
32. Information on the major details of stock options outstanding	2-740(V)	32	1-036	3-048(V)	18	.896	11-758	.008
33. Planned research and development expenditures for the next fiscal year	2-683(V)	33	.810	2-850(V)	28	.912	8-457	.037
34. Description of major plants, mines, or other properties	2-663(V)	34	1-003	2-382(M)	39	.963	13-654	.004
35. Separate disclosure of research and development expense for the past year	2-644(V)	35	.889	2-956(V)	21	.939	21-039	.000
36. Rate of growth in earnings per share for at least the most recent five-year period	2-615(V)	36	1-110	2-481(M)	36	1-287	13-608	.004
37. Breakdown of net income for the past year by major product lines	2-604(V)	37	.934	3-338(V)	9	.662	81-755	.000
38. Breakdown of total sales for the past year by major product lines	2-536(V)	38	.891	3-309(V)	10	.690	90-308	.000
39. Information on major industry trends	2-534(V)	39	.862	2-947(V)	22	.922	30-468	.000
40. Information on major research activities during the past year	2-459(M)	40	.780	2-928(V)	23	.818	36-597	.000
41. Approximate share of the market for each major product sold	2-375(M)	41	.960	3-010(V)	20	.794	47-846	.000
42. Summary of significant financial statistics for the industry	2-329(M)	42	.897	2-618(V)	29	.987	17-315	.001
43. Planned advertising expenditures for the next fiscal year	2-277(M)	43	.865	2-112(M)	46	1-037	9-418	.024
44. Information about the company's pension plan	2-264(M)	44	1-087	3-150(V)	16	.849	73-403	.000
45. Historical summary of the price range of common stock for at least the most recent five-year period	2-183(M)	45	1-123	2-536(V)	33	1-169	15-758	.001
46. Breakdown of total sales for the past year by customers served or industry served	2-155(M)	46	.973	2-903(V)	24	.961	63-022	.000
47. Breakdown of net income for the past year by customers served or industry served	2-146(M)	47	.962	2-865(V)	26	.981	60-535	.000
48. Information on corporate social responsibility	2-106(M)	48	1-016	1-754(M)	50	.910	17-985	.001
49. Relationship of the company's business with key economic indicators	2-000(M)	49	1-050	2-531(V)	34	1-083	27-795	.000
50. Historical summary of the number of employees for at least the most recent five-year period	1-995(M)	50	1-010	2-261(M)	42	1-093	10-463	.015
51. Breakdown of amount expended on human resources during the past year	1-726(M)	51	.996	1-500(M)	51	.857	13-302	.004

^aFor the benefit of those readers who may desire to verbally classify the information items according to relative importance, we have assigned each of the items to one of three broad categories *within each respondent group*. Those items having means of 3-500 or above are labelled E (Essential), those items having means ranging from 2-500 to 3-499 are labelled V (Very Important), and those items having means ranging from 1-500 to 2-499 are labelled M (Moderately Important). Because considerable abstraction and loss of information occurs when the information items are grouped into broad categories, the reader is cautioned against the potential danger of placing too much emphasis on the verbal categories when evaluating the relative importance of the various information items.

^bEach chi-square test was made with 3 degrees of freedom.

^cProbability of .000 (rounded) indicates an actual probability of less than .0005.

that there is no difference between the perceived importance of information to commercial bank loan officers making a term loan decision and the perceived importance of information to financial analysts making a common stock investment decision was rejected for 51 of the 79 information items included in the questionnaire. Thus, significant differences were found to exist for 64.6 percent of the information items.

An analysis of the test results for which the null hypothesis could *not* be rejected indicated that a consensus apparently exists between the two groups on the following major classes of information: (1) certain basic and supplementary financial statements (specifically, the comparative income statement, the comparative balance sheet, the comparative funds statement, and financial statements that have been adjusted for changes in the dollar's purchasing power); (2) breakdowns of sales and net income by division or individual companies; (3) separate disclosure of various expense items (specifically, advertising, maintenance and repairs, depreciation and depletion, amortisation of intangible assets, taxes other than income taxes, rents, and royalties); (4) certain specific information regarding physical production volume, dividend policy, types of common stockholders, long-term debt, leases, subsequent events, advertising programmes, capital projects (nature and method of evaluation), foreign investments, planned capital expenditures, and planned financing; and (5) historical summaries of total assets, stockholders' equity, and number of common stockholders. The results showed a lack of consensus between the bankers and analysts on the remaining 51 disclosure items included in the questionnaire. (These 51 items are presented in Table 1.)

An item-by-item examination of Table 1 should give the reader some insight into the relative importance that the bankers and the analysts attribute to the various information items for which significant differences were noted in the study. Also, the reader should be able to acquire more understanding concerning the extent of agreement that exists within each group regarding the perceived importance of each information item. For example, one of the most controversial issues in the financial community today is the reporting of forecasted information. An examination of Table 1 reveals that, in general, bankers seem to attribute more importance to forecasted information than do analysts (see items 6, 9, 33 and 43). This finding is particularly evident in regard to projected earnings information (item 6). Specifically, of the 51 information items considered in Table 1, projected earnings information is ranked 6th in overall importance by the bankers and only 31st

in overall importance by the analysts. It is interesting to note that a relatively large standard deviation (1.145) is associated with the analysts' responses to the projected earnings item. This indicates that relatively little agreement exists among the analysts regarding the perceived importance of this information. An interesting question, of course, is *why* did the financial analysts assign considerably less importance to projected earnings figures than did the bankers? Perhaps the financial analysts are more accustomed than bankers to developing their own projected earnings data. Also, the analysts may be relatively more sceptical than bankers concerning the merits of forecasts because of the lack of audit and reporting standards in this area.

As another example of the kind of insight that an interested reader may gain from Table 1, consider information on corporate social responsibility (item 48). Both the bankers and the analysts attributed relatively little importance to this information. Empirical research in the area of corporate social reporting has indicated that many bankers and financial analysts feel that in disclosing information on social responsibility in annual reports today, corporate managers tend to limit the disclosures made to those items that make the firm appear favorable from a social standpoint.⁶ This feeling may help to account for the relatively low importance ratings assigned to this kind of information by the respondents in the present study.

Perhaps the most interesting information item for which no significant differences were noted between the responses of the bankers and those of the analysts was general price-level financial statements. Since no significant differences were found, this item is not presented in Table 1. However, the desirability of reporting general price-level financial statements has long been one of the most debated issues in the financial community. Thus, it should be pointed out that neither the bankers nor the analysts attributed much importance to this information. In fact, of the 79 information items included in the questionnaire, the bankers rated general price-level financial statements as only 71st in overall importance, while the financial analysts regarded these statements as 72nd in overall importance. It is also interesting to note, however, that relatively large standard deviations were associated with this information item. This indicates that relatively little agreement exists within each respondent group concerning the importance of this information.

⁶Keim, Gerald, Stanga, K. G. and Strawser, R. H., 'The Usefulness of Social Responsibility Disclosures in Published Annual Reports', *Proceedings of the 1975 Western Regional Meeting of AIDS*, pp. 42-44.

Conclusion

The null hypothesis we tested was that there is no difference between the perceived importance of information to commercial bank loan officers making a term loan decision and the perceived importance of information to CFAs making a common stock investment decision. An analysis of the questionnaire returns provided a basis for rejecting the null hypothesis and for accepting the alternative hypothesis that differences between the bankers and the analysts do exist. Specifically, the hypothesis that the perceived informational needs of the two user groups were the same was rejected (as evidenced by significant χ^2 statistics) for 51 of the 79 disclosure items included in the questionnaire.

Thus, the overall conclusion drawn in this study is that bankers, when making term loan decisions, do not seem to value information in the same manner as financial analysts do when making common stock investment decisions. The differences noted in this study may be the result of fundamental differences in the two types of decisions considered (credit vs. equity investment). On the other hand, the differences may also be the result of differences in sophistication levels between the groups surveyed. The Institute of Chartered Financial Analysts has a number of education, experience, and examination requirements that individuals must satisfy to gain admission. Interestingly, accounting is one of the basic subjects that extend throughout the examination series that CFAs must pass. In accounting, an examination candidate is expected to have the equivalent of at least two years of exposure to academic accounting principles. In general terms, the examinations cover (1) principles and construction of accounting state-

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ments, (2) analysis of accounting statements, and (3) current accounting principles and practices. Collectively, the Institute's requirements help to ensure that members of the CFA profession are highly sophisticated consumers of external accounting information. As a group, the commercial bank loan officers surveyed had not been subjected to similar stringent requirements. Thus, it is possible that the analysts may be more sophisticated than the bankers in dealing with external accounting information.

Although the results of this study are not generalisable to all users of financial statements, either individually or as groups, the findings do cast some doubts regarding the ability of information providers to satisfy the needs of diverse user groups with a single general-purpose information set. The results of this study may be construed as lending some support to those who argue that information providers should develop different information sets for each important user group. However, our study has not attempted to demonstrate that developing different information sets would be better from a cost-benefit standpoint. This issue was beyond the scope of the present investigation, and it may be a fruitful area for further research.

As a final caveat, it must be noted that this study was exploratory in nature. As a result, caution must be exercised in generalising the results to the total population of the user groups. However, we hope that this study contrasting the informational needs of two important user groups is valuable because of the limited amount of empirical research on this topic that has been published to date.

CCA and the Appropriation Account

John R. Perrin

Exposure Draft 18 (ED18) [1] is rather like a Spanish galleon of Armada vintage, concealing a sound hull (Sandilands' Current Cost Accounting (CCA) [2]) beneath a top-heavy and over-elaborated superstructure. Such implied criticism is not intended to capsize ED18: rather it arises from a view that ED18 in its essentials remains valid and necessary, and that it must be salvaged from the tempest of criticism brought down upon it largely as the result of its own over-elaboration.

ED18 is after all only an exposure draft, and it is legitimate to suggest that in the long run we shall get a better Standard for 'Accounting under Inflation' as the result of ED18 (and its supporting publications) being so comprehensive, complex, and controversial. Each individual commentator will have his own particular bias and areas of concern as regards ED18. My main concerns are neatly captured by the Appropriation Account recommended in ED18, and developed further in Appendix 2 to ED18. Whilst it is of course made clear in ED18 that Appendix 2 does not form part of the official text of the 'Statement of Standard Accounting Practice' [3], nevertheless it draws together and seemingly faithfully reflects scattered but related matters of interest from the text of ED18 proper, and so it would appear to provide a fair and reasonable framework of reference for discussion. Before taking up the *specific* items covered in the Appendix, however, it may prove helpful to consider the *general* issue of the *raison d'être* and function of the Appropriation Account.

ED18 and its supporting publications, the *Guidance Manual on Current Cost Accounting* [4] and *Background Papers to the Exposure Draft on Current Cost Accounting* [5] do not appear to provide any convincing conceptual definition of the Appropriation Account and its integral or inherent function in CCA. In practice, however, it seems that the Appropriation Account may have two functions. The first is to allow various adjustments to CCA operating profit to compensate for CCA not being a totally comprehensive system of 'accounting for inflation' (e.g. CCA's lack of measurement of the changing 'real worth' of monetary assets and liabilities). The second

is to allow directors to take account of special situations (e.g. an expectation of contracting the business), or to amend the relatively objective signals arising from CCA valuations and cost calculations, in order to increase/reduce the measure of 'surplus' apparently available for distribution, and/or for reinvestment to increase the 'real' size of the organisation (i.e. real-asset cover per share).

In other words, the Inflation Accounting Steering Group (IASG) and the Accounting Standards Committee (ASC) are effectively indicating that CCA operating profit is not a trustworthy measure of current-period distributable 'surplus'. The relevant supporting comment derives from Paper 18, 'Monetary Gains and Losses and Measurements of Profits and Gains in Real Terms', in [5], where much of the discussion of the merits of alternative accounting systems revolves around the problem of maintaining the 'substance of the business'. But the essence of the problem is to get agreement on what is the 'substance of the business', rather than on how to measure the maintenance of that substance. Is the 'substance of the business' its physical productive capacity, or its financial/economic survival capacity, or what? Until we have agreement on precisely what is the 'substance of the business' we cannot prescribe a definitive accounting system to measure its maintenance, and thus to identify a residual 'surplus' or 'profit'.

It may appear that the IASG gave up the battle to agree upon a single dominant and universally-defensible definition and measurement of the 'substance of the business'. Perhaps they were justified, in view of the number of alternatives and permutations available, and in view of the fact that the more rigorous conceptual alternatives (e.g. the so-called 'CCAB ideal' basis, as outlined in [5] with cross-reference to much more detailed discussion previously expounded in a book by Professor W. T. Baxter [6]) appeared difficult to 'sell' and to apply in everyday practical accounting. In the event, then, the IASG settled on a basic notion of capital maintenance that it thought, in the euphoric aftermath of Sandilands, would prove widely acceptable, reasonably economical and easy to apply, and reasonably prudential – CCA –

leading to the derivation of Current Cost Profit/Loss as the key and reasonably objective criterion of operating performance (profit).

Hence the Appropriation Account, and its practical importance as a safety valve to allow firms to make adjustments relevant to wider aspects of capital maintenance than are allowed for by CCA, without destroying the objectivity and comparability of Current Cost Profit/Loss (CCP/L) as a key performance measure in its own right. But three questions arise. Firstly, should a single account, termed 'Appropriation Account', be used to commingle what are in effect 'profit adjustments' together with what are genuinely 'appropriations' *out of profit after it is 'struck'*? Secondly, a related point although not unique to the use of an Appropriation Account *per se*, should profit adjustments for inflation effects not captured in CCA, be allowed to be charged/credited to an account labelled 'revaluation reserve', whose primary function is to store and disclose the effects of CCA asset revaluations? Thirdly, should so much discretion be allowed in the Appropriation Account, for directors not only to make inflation-effect adjustments that are *supplementary* to CCA, but also to make adjustments that may actually *cancel out* CCA calculations made and recorded 'above the line' (i.e. before striking current cost profit or loss)?

I propose to return to the above issues later in the paper, but further generalisations concerning the Appropriation Account may be more sensibly conducted *after* we have examined in some detail the proposed contents of the new Appropriation Account.

Increased appropriations

Appendix 2 cites four examples of situations that might call for appropriations to revaluation reserve greater than the net-surplus on revaluation of assets, as calculated above the line in the process of deriving CCA valuations of real assets, and the related charges for depreciation and cost of sales. The first example concerns 'provision for the maintenance of net monetary assets', and three sub-cases are mentioned in the Appendix.

Trade debtors less trade creditors

It will be the normal expectation of a business that under inflation of its input prices the average balance of circulating working capital (stocks, less trade creditors, plus trade debtors) will rise more or less *pro rata* with the CCA value of stocks themselves, and yet the CCA system allows an inflation adjustment to be made above the line only for the stocks component of the working capital cycle. CCA relies on the 'deprival value' criterion, and whereas unsold stock (normally) rises in monetary value with inflation,

both-trade creditors and debtors are firmly denominated in fixed-money values. Thus, any attempt to deal with creditors and debtors above the line would appear to flout CCA criteria. However, dealing with them only below the line (i.e. in the Appropriation Account) greatly dilutes the reporting impact of their measurement. Also, as it is rational to believe that the Inland Revenue may not be able to accept below the line discretionary directors' adjustments of reserve appropriations as affecting 'taxable' profit, the ED18 treatment appears to condone the exclusion of the cost of real working capital maintenance from the category of 'legitimate business costs' reported above the line for ED18 purposes. In effect, under ED18, 'topping up' working capital for inflation would be treated as a 'financing operation' rather than as a cost, i.e. the topping-up would have to be made either from post-tax retained earnings, or from incremental outside finance.

This worry about the adequacy of the CCA cost of sales adjustment is not original to the writer: the point has been made in differing contexts, by such authors as Gibbs [7] and Lawson [8].

The Sandilands and ED18 attitudes to adjusting cost of sales only for stock appreciation, and not at all for the other elements of net working capital 'appreciation', may not be unrelated to CCA definitional criteria that are very much derived from, or dependent on, the CCA balance sheet. But because it may be agreed that 'cash is cash' under CCA, and that cash therefore justifies no balance sheet value adjustment because its replacement cost (RC) = its realisable value (RV) = its economic value (EV), this should not mean that the *circulation* of cash through the complete creditor-stock-debtor cycle need be debarred conceptually from measurement and analysis – in view of the fact that making adjustments only for the stock element in this cycle effectively converts the adjustment to one for 'cost of production of goods-sold' rather than for 'cost of sales'.

A related issue is the question of the valuation date to be applied to cost of sales adjustments. This is defined in ED18 (para. 157) as 'The date of consumption . . .', i.e. 'the date at which the stock or work in progress becomes specific to the requirements of a particular customer as a result of a contract and will therefore usually be the date of delivery to a customer'. Why need it be the date of *delivery*? Why not the date of *sale*? Why not (except for certain practical reasons, perhaps especially year-end calculations) the date of *cash receipt* from the sale?

In principle the choice of date should presumably relate to the recycling of funds and commitments within the firm. The object of the cost of sales

adjustment is to reflect the firm's true costs of maintaining a continuum of economic activity. One may therefore ask at what date does the firm replace (at least notionally, i.e. to allow for substitute activity) working capital resources consumed? Does the firm re-order (replace) when it delivers, when it sells, or when it collects the cash from its customers?

In practice the timing of stock replacement will be closely dependent upon the nature of a firm's trade – whether the firm makes for stock, or only after receipt of customer orders, and whether the goods are standardised or custom. Possibly, however, this divergence of practice is not material to our problem. Our main problem is, or should be, to maintain the *economic* resources and viability of the enterprise, and to that end the replacement of specific *physical* assets, if relevant at all, is only relevant as a proxy for economic replacement, or as a 'crutch' to assist objectivity in both the accounting process and the audit function. Is the crutch necessary?

In this matter as in many other issues of controversy that arise in inflation accounting, should we not take as our criterion of reference what happens to the actual corporate cash flows? Thus, it would seem most relevant to date transactions for inflation accounting measurement purposes – for purchases as well as for sales – as at the actual cash settlement dates of those transactions (and *not* at the dates when goods happen to become specific to the order of identifiable customers). It is only at the actual dates of cash transactions that theoretically correct measurements of the effects of inflation on both the actual uses of funds, and also the opportunity cost uses, can take place. In practice, however, purchase and sale transaction dates might prove acceptable proxies for cash flow dates, with results not materially different in most cases.

Contract work in progress

It follows from the arguments outlined in the previous section that no obvious or *prima facie* case exists for treating contract work in progress differently from ordinary production work in progress, at least for the purpose of inflation accounting cost of sales adjustments. Cash flow or sales transaction dates should govern, and this procedure should take account of progress payments received, and their timing. Numerous variations of 'contract production' situations exist right across most categories of industry and commerce, and the only way to obtain consistency and comparability across all trades is to apply the same criteria of measurement, consistently, in all current cost profit and loss accounts.

To the extent that this item of Appendix 2 (item 1-a-ii) refers to a particular problem in certain

industries, especially construction and civil and plant engineering, it may highlight a legitimate area for directors' discretionary adjustments in the Appropriation Account. I refer to the problem of a firm which produces only to contract, and where contracts are few, large, infrequent and subject to erratic timing caused by business cycles or the stop-go capital-spending policies of governments. This is a quite different situation from the routine cost of sales adjustment prescribed for production already in hand. Intermittent production in such cases can lead to periods of slack when companies become relatively highly 'liquid', and if their assets remain idle and 'tied-up' in cash or other monetary assets, then genuine losses can arise during periods of inflation (assuming negative real earnings on cash balances and on short-term marketable investments). In theory, this situation could be described as part of the 'financing' decision, rather than the 'profit measurement' situation. That is, theory would assume that the affected firms, unable to reinvest all their cash flow immediately in productive work, would either turn to portfolio investments where 'real capital' could be preserved intact, or else they would (temporarily at least) 'disinvest' by returning capital to shareholders so that the latter could find a better opportunity use for that capital. But in practice, given the restrictions of the law, the friction costs of the market place, and the uncertainties inherent in restoring needed capital when trade picks up, it is an observable phenomenon that the type of firms affected are in fact not able to maintain 'real' capital intact during periods when significant inflation coincides with a depressed level of production activity. Therefore it does seem wholly fair and provident that directors should be empowered, in the Appropriation Account even if arguably not 'above the line', to make provision for the maintenance of the 'real' purchasing power of net monetary capital. That said, it must again be emphasised that this is a matter quite separate from 'cost of sales' adjustments for productive work in hand, which adjustments should be allowable, and be made wholly above the line in the process of striking current cost profit or loss.

Banks and similar institutions

One section of Appendix 2 relates especially to banks and other institutions required by law, by contract, or by the conventions of the market place to hold a material balance of monetary assets in excess of monetary liabilities. Equity demands some method of recognising this situation by appropriate adjustment, so as to allow profits to be declared, taxed, and distributed only *after* measurement and recognition of the handicap to such institutions that

has been imposed by inflation. In view of the fact that a working party of the IASG is (at the time of writing) pursuing this matter and taking up further evidence and research information, I have no wish in this paper to pre-judge their possible conclusions, or to condemn the method of treatment provisionally allowed by ED18.

On the other hand, item 1-a-iii of Appendix 2 does state that "A similar situation may arise with other institutions holding cash." Reference was made in the previous section to contract-type industries where intermittent orders may create liquid net monetary asset situations during periods when inflation and recession coincide. This is a situation probably beyond the control and responsibility of management, and as earlier noted, adjustment for the loss of purchasing power locked up in net monetary asset balances is certainly justifiable in the Appropriation Account, and may be justifiable even 'above the line' (and hence, presumably, eventually for tax-relief purposes). There will, however, be other situations where the equitable solution is less clear-cut. For example, if the management of a diversified industrial company elects to hold back available cash flow from re-investment in stocks or fixed assets, and thus accumulates an abnormal level of net monetary assets as the result of a voluntary policy of risk-minimisation, or of political protest even, it is not at all clear in equity that any adjustment for loss of 'real' purchasing power should be allowed 'above the line' (or for tax purposes). On the other hand, it should perhaps be not just a voluntary option, but indeed a compulsory requirement, that within the Appropriation Account directors should disclose the full measure of loss of 'real' purchasing power arising from the directors' opting to 'go liquid' in lieu of re-investing in stocks and new plant.

Provision for backlog depreciation

Here we refer to item 1-b of Appendix 2, and we may refer also to para. 110 of ED18 (definition of 'backlog depreciation'), and to para. 147 (further explanation of the nature of 'backlog depreciation'). Backlog depreciation is the difference between fixed-asset gross and net book value to the business at year-end, less the cumulative total of depreciation charges to Profit and Loss to date. Now, whereas the term 'depreciation', or, by extension, 'backlog depreciation', may imply a 'cost' to most accountants, its use in ED18 and elsewhere in the literature in the context of 'backlog depreciation' is essentially to describe what is a *valuation adjustment*, not a 'cost'. Overall, the treatment in ED18 tends to accept the argument (see Baxter [9] for a detailed discussion) that in the general case of firms that replace assets on a steady

and continuing basis from year to year, backlog depreciation does not in fact arise as a 'cost' under CCA – for the reason that as current depreciation charges at current costs are matched in time by equivalent cash outlays on the replacement of some part of the capital stock, acquired at the same overall price-level, the total stock of 'real' assets is thus maintained more or less intact.

However, a special case does arise, as Appendix 2 states, 'in the case of a company operating a limited number of major assets and where the nature of the replacement cycle of those assets results in amounts set aside by way of depreciation being insufficient for their replacement.' In practice this legitimate special case should prove to be fairly rare. Moreover, to the extent that it occurs, the question must be asked what interim use has been made of the 'amounts set aside by way of depreciation' in prior accounting periods. If such 'amounts set aside' have been invested in portfolio assets (or even left on deposit account) at rates of interest/earnings in excess of the pure cost of money (say, generally 2% to 5%, depending on relative risk), then the excess return on the portfolio earned over and above the pure cost of money (net of tax), should be considered as a contribution to depreciation/replacement fund requirements, and this should be required to be *deducted* from any topping-up provision for backlog depreciation that directors are allowed to make in the Appropriation Account. ED18 fails to mention – let alone to impose – this important constraint on the measurement and recording of backlog depreciation.

Worse still, item 1-b of Appendix 2 appears to leave it open to directors' discretion to charge the Appropriation Account with backlog depreciation even in cases where the legitimate 'limited number of major assets' situation does not exist.

It may be suggested that where the legitimate special case for charging backlog depreciation exists, the charge should be made above the line prior to striking current cost profit or loss; and it may be suggested that for all other cases of so-called backlog depreciation directors should retain the right to make provisions below the line, but instead of misleadingly labelling them as 'backlog depreciation' they should declare and label them in the Appropriation Account as what they really are, e.g., 'Provision to compensate for inadequate rates of past depreciation', or '... underestimated technological change', or whatever. In short, directors must not be allowed to label as 'backlog depreciation', charges (provisions) whose only rational explanation is that the directors have previously underestimated and underallowed for the cash flow requirements necessary to maintain the real economic viability of the enterprise.

Replacement of seasonal agricultural produce

This item (1-c) of Appendix 2 appears to be a reasonable basis for a provision. But, on reflection, perhaps the matter is not so simple, or so straightforward, as it may at first appear. To the extent that the seasonal agricultural produce concerned appreciates more or less *pro rata* with cost inflation generally, then it can be argued that this is a genuine business cost – not a matter for directors' discretion – so that therefore the measurement of the cost of holding liquid assets for some months until the next restocking season, and of topping-up to meet the next round of inflated purchase costs, should be treated as an automatic above the line adjustment before striking current cost profit or loss (provided, of course, that offset is made for any return in excess of the pure cost of money on the monetary assets held in the interim period before re-stocking).

There may, of course, be special circumstances that would justify directors' action in the Appropriation Account. Recently, world-wide attention has been focused on the meteoric rise in the value of coffee. Part of the impact, as regards the UK at least, has arisen from the decline in the exchange value of sterling; but even for the UK the main cause of the price rise has been the physical commodity shortage of coffee, and the consequent effect on world market prices. Now this situation exemplified by coffee presumably far exceeds the criteria specified in the previous paragraph for the general-case rule of providing for replacement of stocks of seasonal produce – i.e. by charges above the line against current cost accounting profit or loss. Here, for coffee and equivalent situations, we encounter a confused problem, where cost and profit measurement become commingled with financing decisions. It would appear 'obvious', let us say by reason of invoking an extrapolated definition of 'natural justice', that the current season's Profit and Loss should *not* be burdened with making good the charge needed to fund the next season's grossly inflated commodity (coffee) replacement costs. Indeed with so great a cost increase, the producer/distributor cannot normally and realistically expect to retain a constant volume of turnover of produce. Instead, realistically, the firm will doubtless anticipate a smaller volume combined with a higher unit margin (although possibly on a somewhat reduced percentage margin). For a CCA system, then, at the theoretical level we might hypothesise that 'replacement' of coffee was needed, not at a *normal volume*, but instead at a reduced volume adequate to generate a *normal total contribution*. The practical problem here is one of objective measurement, given that the desiderata relate to future events and market conditions. Here

it would seem that the only rational and prudential policy for accountants to follow is firstly to make the kind of deprival-value charge/provision mentioned in the preceding paragraph – preferably above the line before striking current cost accounting profit or loss – and then secondly to allow directors to have discretion in the Appropriation Account to make and declare such additional provision as they may see fit in order to provide full information for shareholders, and also thus give public notice of factors that have guided the directors in reaching their decisions in the matter of the trade-off between current dividend levels and earnings/funds retentions.

The foregoing may have served to illustrate two important features of the ED18 recommendations that, in my view at least, have not received sufficient emphasis, recognition or discussion. These features relate to the difference between the current cost Profit and Loss Account and the Appropriation Account. Firstly, the ED18 specification of these two separate accounts provides the opportunity to segregate relatively objective measurements, made and reported within the current cost Profit and Loss Account under the criteria and responsibility of the professional accountant, from the more judgemental and future-oriented provisions and other adjustments (i.e. 'signals' to shareholders and other interested parties) that may be made in the Appropriation Account at the discretion of directors (without the same burden or odium of responsibility being imposed on the accountants and auditors). Secondly, the ED18 requirement for the two separate accounts allows for a clearer demarcation between the reporting of strictly profit and loss phenomena above the line in the current cost Profit and Loss Account, and the reporting of strategic factors and of provisions especially relevant to the *financing decision* for the firm in the separate Appropriation Account. In the author's opinion, the requirement to supply these two quite different types of accounts, as stimulated by ED 18, is a valuable contribution to the potential improvement of accounting *plus* financial disclosure, i.e. to the need to unravel and separately disclose accounting measurements as distinct from financial judgements. The problem that remains, of course, is to *draw the line* at the correct point, i.e. to identify and differentiate the cut-off between accounting measurements (current cost Profit and Loss Account) and financial judgements (Appropriation Account).

Maintenance of shareholders' equity

ED18's allowing directors to appropriate to revaluation reserve an amount greater than the net surplus on revaluation of assets, in respect of any shortfall in the CCA system's maintenance of the

purchasing power of the shareholders' equity, is no more than a 'gimmick', a 'sop' to shareholders, and an unnecessary gesture of contrition to supporters of current purchasing power accounting (CPP), whose proposals [10] have rightly been consigned by CCA to the annals of accounting history. Surely it is a sufficient gesture to provide, as ED18 does, for a supplementary 'Statement Showing Effect of Change in the Value of Money' (paras. 76-79 and 120-25, and Appendix 1), without additionally allowing directors the option of adulterating the actual accounts of the firm.

A reasonable contemporary view of the limited company is that it constitutes a vehicle for combining and seeking to fulfil the interests of shareholders, employees and others (customers, suppliers, local government, etc.). *The Corporate Report* [11] points the way towards the importance of 'neutrality' in the reporting of accounting and financial information, i.e. neutrality as between and among the competing concerns of the various parties at interest. Within the contemporary ethos, then, it would be quite wrong to imply, by 'maintenance of shareholders' equity' adjustments in the Appropriation Account, that the firm has some sort of responsibility to maintain intact shareholders' purchasing power to the implicit exclusion of employees' purchasing power, or any wider interest. Rather, it is the duty of the limited company – the private corporation – to endeavour to maintain its own purchasing power, or its own economic viability, to the end that it can service in equitable proportion all the legal and social demands properly laid upon it. It follows that any reporting on the maintenance of shareholders' equity should be relegated to footnotes or other supplementary information and that, ideally, it should be balanced by equivalent reporting on the company's success, e.g. in maintaining its employees' purchasing power during the year concerned.

Decreased appropriations

Appendix 2 cites two situations as examples where directors might reasonably appropriate or transfer to the revaluation reserve amounts less than the net revaluation surplus indicated by the relevant CCA calculations for cost of sales and depreciation adjustments needed to maintain value to the business.

Replacement of assets by creditor financing

The first example (item 2-a) relates to a reduction of transfer to revaluation reserve made justifiable by the fact of a firm's having an excess of trade creditors over trade debtors, so that part of its burden of the higher replacement cost of assets (i.e. stock, primarily) under inflation, is effectively paid for by creditors

(i.e. compensated by the reduced 'real' cost of settling net creditors' balances in depreciated money). This situation in practice is applicable only to a small minority of firms, but where it applies, then the adjustment allowed by ED18 would appear to be merited. The situation is the mirror image of item 1-a-i of Appendix 2, which was discussed at length earlier in this paper. Inasmuch as we are here concerned with the effect of realised price movements, and not with future uncertainties or contingencies where the precepts of 'prudence' might prevail, it seems obvious that 'consistency' must apply, and whatever treatment is applied to 'trade debtors less trade creditors' or to the net working capital cycle as discussed earlier, must likewise be applied to the 'trade creditors less trade debtors' situation that occurs in this example.

Replacement of assets by borrowings

Appendix 2, item 2-b, states laconically that 'The directors may be able, and intend, to finance the replacement of assets by . . . borrowings while maintaining a reasonable debt/equity ratio.' The 'borrowings' referred to may be 'long-term and/or short-term', but in the main it seems clear that this example is intended to apply especially to the common situation where a material part of the long-term capital of a firm is financed by debenture capital or the equivalent. But why should the *method* of financing a business affect the amount of the annual transfer of revaluation surplus to the revaluation reserve account?

Taking the above question initially in a narrow and technical context, I would argue that the accounts should not commingle information from different sources and causative influences into one single account. The revaluation effects of 'assets' and of 'liabilities' should not be netted out in a single account, suppressing the impact of each separate causation. Especially is this so under CCA, where assets will generally be revalued by different pricing criteria, or different price indices, as compared to the price indices applied to measuring the notional gains from holding fixed-principal debt capital under inflation.

Let us assume two firms of more or less identical size and asset mix, differing materially only in respect of their long-term financing. Firm A is all equity financed, whilst Firm B is financed 60-40 by equity and debentures, respectively. Per ED18, directors in Firm B would be empowered to reduce the transfer to revaluation reserve in proportion to the fraction of long-term capital supplied by debt finance. Firm B, with effectively identical assets to Firm A, could end up with a revaluation reserve about 40% smaller than Firm A. But surely the entire function of a

revaluation reserve is to measure, emphasise, and disclose the effects of inflation (i.e. of both specific and general price changes) upon the *asset structure* of the firms? Given more or less identical assets, the revaluation surplus accounts of the two firms also should surely be more or less identical. If differences in financing exist, and if such differences of financing really do give rise to different valuations of the firm (i.e. the 'firm', please note, and not the 'firm's assets'), then such differences should be reflected in separate accounts and not commingled with asset valuation surpluses.

However, is it indeed possible that two firms that differ only in respect of their long-term financing structures (i.e. different gearing ratios) can have different total valuations when measured for company accounting purposes, as distinct from stock exchange valuation purposes? In contemporary society is it not the case that the limited liability public company is an independent legal and economic entity, first and foremost, and that it is not simply a 'creature of' or extension of its shareholders' collective personalities? It is the function of the stock market to measure, as nearly and as 'perfectly' as possible, the relative values of shares in firms A and B, taking full account of all differences between the two firms, including the differences in their gearing ratios and associated financial risk; but it is *not* the function of company accounts to attempt to measure the magnitudes of those differences.

Borrowing gains and interest costs

ED18 briefly considers the possibility of analysing the interest costs paid by the firm into the two components of normal interest and inflation-premium interest (para. 172-74) only to dismiss this as infeasible. This is fair enough to the extent that there is nothing notional about the total interest cost: it constitutes a current-period cost, paid out in cash, and in that sense it seems on all fours with, e.g., cash wage payments and is entitled to be charged in full above the line in the process of determining current cost profit or loss. However, to the extent that strict CCA principles have been 'bent' to provide, via the Appropriation Account, a mechanism whereby notional (holding) gains on the falling real burden of long-term debt capital can be reported and can be made to appear to confer a substantial real benefit on the firm or its shareholders, then the logic and equity of the reporting process may be badly distorted.

Of course it so happens that recently interest rates have markedly lagged behind inflation rates, so that the notional holding gain on long-term debt (especially where the debt has been of long standing) has indeed substantially exceeded the inflation premium

paid in interest charges. But this phenomenon need not always prevail, so therefore an accountancy reporting system that treats *all* interest costs as 'normal business expense' above the line, and then shows the financial impact of debt capital as *exclusively* a benefit or gain below the line, seems potentially to be seriously misleading.

At the present time it is a commonplace to read or hear reference to the 'negative real interest rate' (i.e. to the prevailing market interest rate less the rate of inflation). The notion has its essential kernel of truth and validity, yet also it seems to contain a patent nonsense, and so to many persons, perhaps, the practical solution is to ignore the inflation premium on interest, and to treat all interest, as recommended under CCA, as a straightforward above the line charge. Is this really necessary and desirable, however? Surely all interest charges consist of three components: (a) the pure cost of money, (b) a premium for the perceived relative financial and business risk attaching to the borrower, and (c) a further premium or discount for market factors, or supply and demand (these market factors would include the general state of confidence, inflation, the opportunity cost uses for liquid funds, and the current impact of government measures inclusive of taxation, the money supply, and the public expenditure level and its financing, etc.). Now it may be suggested that for any given Firm X, at any given point in time, the interest rate it has to bear consists of (a) the pure cost of money (say 3%), plus (b) the risk premium (say 2% for a large and relatively secure firm), plus the balance of the rate, covering all the elements mentioned in (c) above. It should not surprise one if (c) is currently significantly less than the rate of inflation, given *inter alia* the depressed state of the economy, the high rate of saving achieved, and a widespread general preference for liquidity.

To summarise, firms are currently paying interest that consists of a *positive* cost of money, a *positive* risk premium, and a market factor cost that is also positive, although substantially less than the inflation rate. It should not be beyond reason, or beyond the ability of the accountancy profession and other interested parties, to agree firstly on the pure cost of money (note that there are historical data and that there are statistical tests that can be used), and to agree secondly upon the 'risk premium' appropriate to particular combinations of financing and performance measures as applicable to the cases of individual firms.

Given the strength of the argument that the market premium inflation component of interest cost is just as much an above the line CCA cost as, e.g., the current inflated wage costs of production, then I

would not press the point of separating the two main elements of the interest charge as between the Current Cost Profit and Loss Account and the Appropriation Account. I do believe it would be helpful to better reader understanding of the accounts, however, if a memorandum note were entered in the Appropriation Account alongside any recording of notional holding gains on debt capital, so as to give clear report and emphasis to the size of that portion of the interest burden caused by inflation, which may represent a significant countervailing element when compared to the holding gain notionally associated with any reduction of capital gearing caused by inflation.

Notional gains on holding long-term debt

In the pre-Sandilands era the CPP adherents argued that there was an automatic gain to shareholders (and therefore to the firm itself as a collective, if notional, embodiment of the shareholders' interests) when the purchasing power of that portion of the firm's wealth attributable to debt-holders fell (because the debt was denominated in a fixed monetary principal), and that this should be quantified as a holding gain to the firm and its shareholders – a gain that possibly could be considered distributable at the directors' discretion (and if distributable to shareholders, then possibly taxable?). This CPP argument was contested by various writers [12] who may be consulted for details. Space here does not permit of a full review of the relevant arguments, but at the risk of some over-simplification, the two key criticisms of the CPP view might be summarised as follows: firstly it was argued that (distributable) gains must derive from actual trading operations and realisable transactions, that inflation of itself gave no guarantee of higher operating profits, and that the mere fact of a firm's possibly suffering from the complex effects of inflation to the point of operational decline, losses, and possible insolvency, at the same time as an impressive CPP gain on holding debt was being recorded in the accounts, should provide *prima facie* suspicion as to the conceptual and practical unsoundness of the alleged holding gain; and secondly, that the CPP holding-gain adjustments falsely confused the *financing* of a company with its *performance measurement* and provided for 'gains' to be at least notionally distributable in total disregard of any associated or alternative cash flows available to distribute the gains.

Research carried out at Warwick University [13] has attempted to test the evidence as regards whether or not capital gearing has benefited shareholders during the period 1966–74, during most of which period admittedly inflation was at a more subdued rate than during the last two or three years. Never-

theless, it was argued that over this latest nine-year period for which full published performance data were then available, even the moderate but gradually increasing rate of inflation should have brought relative benefit to shareholders in firms with above average gearing, as compared to firms with below average gearing, if the CPP-type holding gain on debt capital was to have any validity or credibility. We defined benefit to shareholders as the aggregate of annual dividends received plus or minus the annual change in stock exchange share value over that period. After applying correlation analysis, the research concluded that no evidence could be found to show that relatively higher gearing had led to relatively higher shareholder benefits in the firms concerned. A second run of this research test [14], with data added for 1974–75, an enlarged sample, and the use of further statistical tests, broadly confirms the earlier results. These results should not give surprise, as on reflection it will not appear strange to reason that the beneficial effects of gearing are often passed on, under pressure of competition, more fully to a firm's customers (prices and profit margins lower than otherwise) than to its shareholders. In conclusion, it would appear that to the limited extent that shareholders benefit from gearing directly (i.e. other than through a lower corporate cost of capital, and a more competitive stance), the benefit derives (a) erratically over time, and not steadily or *pro rata* with inflation, as CPP-type adjustments would suggest; and (b) primarily only to firms that achieve gearing levels markedly higher than the norm for their trade and risk class (and which 'survive', i.e. are also managed efficiently in other respects). Thus the original CPP holding gains arising *pro rata* to long-term debt must be considered highly dubious, and the same claim is made in respect of the more recent proposals for recognising 'capital gearing gains', as discussed below.

ED18 takes up a compromise position, in between CPP and Sandilands, on the measurement and reporting of gains or losses on monetary items. Its philosophy is outlined in paras. 258–63. As regards non-monetary assets, it specifies in para. 137, 'that while there is an initial presumption that the surplus on the revaluation of assets will need to be retained in the business, the directors . . . will decide sometimes to appropriate more or less than this figure to the 'revaluation reserve' – . . . that part of the reserves regarded by the directors as not being currently available for distribution . . .' Para. 137 further specifies that the directors should give their reasons for the amount of the appropriations that they make, and it refers readers to the guidelines in Appendix 2.

Appendix 2, of course, authorises directors to

reduce the amount of revaluation surplus transferred to revaluation reserve, to the extent that they 'may be able, and intend, to finance the replacement of assets . . . by borrowings while maintaining a reasonable debt/equity ratio.' This appears to be a circuitous and almost devious prescription to empower directors to take account indirectly of holding gains on monetary liabilities – in seeming contradiction to the spirit at least of para. 258–63 of the exposure draft. The effect is to allow directors to divert revaluation surplus, initially presumed to be retained in the business, to distributable surplus – on the grounds of ability and intent to replace any funds distributed to shareholders, by new borrowed funds raised up to such amount as would more or less maintain the gearing ratio (debt/equity) prevailing prior to the latest equity revaluations based on inflation. In effect, this procedure constitutes adoption of the geared capital gains originally advocated by various critics of Sandilands [15], who may have felt either that CCA's strict definition of profits would disadvantage shareholders by restricting dividends unnecessarily, or else that the economic effects would be undesirable through over-narrowing the tax base, and through causing business funds to be excessively 'locked up' in individual firms, instead of healthfully coursing through the resource-reallocation arteries assumed to be represented by the cycle of dividends to investors, investors' funds to financial markets, and financial markets back to worthy firms for their operational use.

Under the above rule, firms would in general need to borrow cash of more or less the same value as they paid out in dividends. Notionally it is the same cash. This might be a harmless, if needless, exercise, provided that there were no friction costs. But there are. Firstly, taxation, which may take up 50% or more of the cash flow. Secondly, investors and markets may not feel disposed to recycle all of the after-tax cash flow back to industry and commerce. Thirdly, there are the expenses and profit 'cuts' of each stage of the re-cycling infrastructure. At the contemporary rate of inflation, an inspired guess would suggest ED18 geared capital gains of possibly £2,000 million p.a. as being available to directors' discretion. If all this sum were paid out in dividends, then about a billion pounds would be lost in tax, and more would be siphoned off by the other frictions, so that less than a billion pounds would recycle back to industry and commerce. Either firms would then go short of cash (at least the weaker brethren amongst them), or else something over £1,000 million would have to be found from other sources (perhaps the cash no longer required for borrowing by government, because of its increased tax revenues, – or would the matter

resolve itself that logically? For government instead might elect to spend more, without reducing its borrowing *pro rata* to its tax revenue increase).

I would not wish to deny the tax collector his fair share – but his fair share relates to profits or earnings, whereas by now it should be clear that what we are discussing is not the distribution of realised or predictably realisable business earnings, but rather simply a restructuring of the *financing* of companies, disguised as earnings (distributable surplus) and 'handed to the tax collector on a plate'. The more rapid the inflation, the higher the gearing gain, the higher the dividend payout of unrealised distributable surplus, the higher the taxes, the more difficult to restore cash balances – what sense does this offer, and what encouragement does it offer to government (the taxation authority) to fight inflation?

For safety and prudence, firms should be required to borrow their extra cash for 'replacement of assets' (Appendix 2, item 2-b) *before* they declare distributable surplus. Asset maintenance should take precedence over dividends, especially dividends not based upon realised profits and realised funds flows. Moreover, to the extent that inflation increases the shareholders' benefits (although this has more to do with expectations of higher future operating profits, than with paper-juggling with balance sheet values and ratios), this can and should be reflected in stock exchange share prices to the extent that the benefits are credible and capable of realisation. This existing mechanism should provide both an equitable and a sufficient reward to the shareholders.

Business contraction or growth

Item 3-a of Appendix 2 allows for directors' discretion to signal an intended overall contraction of the business by transferring some part of current revaluation surplus, or prior-period retentions held in revaluation reserve, to the balance of the Appropriation Account – thus making funds available for distribution, which if then distributed would reduce the economic/physical scale of the enterprise. Many economists, and perhaps even many shareholders, may applaud in principle this opportunity for the unsuccessful or unfortunate firm to disinvest and return real capital to the shareholders' hands for redeployment. Regrettably, it is by no means certain that this discretionary possibility could not be abused: perhaps the most obvious potential abuse and worry for accountants and auditors is the risk that this form of transfer and real-capital reduction might be disguised by equivocal descriptive captions or explanations that failed to signal 'loud and clear' to shareholders, creditors and employees just what was the true nature and intent of this gesture and of the

apparent increase in distributable surplus. Moreover, to the extent that such transfers resulted in real capital being paid out as period dividends, then seemingly it would undesirably and unfairly expose real-capital repayments to the burden of taxation as income in the hands of shareholders.

Item 3-b recognises that directors may wish to signal intentions or need for growth (i.e. growth as measured by capital employed) by transferring some part of the current cost profit or loss, or other free balances within the Appropriation Account, to a general reserve account. This, it would seem, represents authority for prudential behaviour such as directors have been authorised to follow even under historical accounting. It should be no less welcome simply because of its steam-age antecedents.

Conclusion

This paper has travelled through Appendix 2 of ED18, with occasional brief excursions on branch lines into a few of the areas of uncertainty or controversy that make ED18 interesting, important, and just possibly hazardous in places. Is it better to travel or to arrive? ED18 itself has not yet arrived. It contains too many inconsistencies between its central CCA theme, and the variations of practice that it seems willing to allow – especially within the Appropriation Account. Phrased differently, the Appropriation Account leaves too many ‘loopholes’ for exercising the ingenuity of directors.

It may be counterargued that ‘loopholes’, or flexibility, are essential to make a new and practically untried system of accounting measurement workable in practice, as the operational and transitional problems of applying it are discovered. Possibly so: this must be a matter largely of personal judgement. In my judgment ED18 is right to propose a separate Appropriation Account to isolate matters of directors’ discretion, and adjustments of a purely financial-structure type, from the more objective and rigorous measurement of operational performance provided for in the Current Cost Profit and Loss Account.

In contrast, it is my judgement that ED18 is in error in allowing net working capital maintenance to be treated only as a discretionary matter, relegated to the Appropriation Account. Additionally it is in error in allowing directors’ discretion to reduce the retention of revaluation surpluses, and to make them

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available for dividends as though they were earned and predictably realisable. In other ways, too, ED18 seems to take unnecessary risks by allowing excessive discretion. Discretionary liberty could become discretionary license, and the Appropriation Account, as presently specified, needs revision and reform to save it from the fate implied by the foreseeable jibe of ‘Misappropriation Account’.

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- [15] See e.g. Martin Gibbs *et al* in *Phillips & Drew Research* for April 22 1976 (p. 6) and December 1 1976 (pp. 5-6).

Explaining National Differences in Consolidated Accounts

R. H. Parker

In spite of the recent efforts of the International Accounting Standards Committee and the EEC Commission,¹ accounting theory and practice in relation to consolidated accounts still differ considerably from country to country, even in such advanced industrial nations as the USA, the UK, the Netherlands, the German Federal Republic and France. The aim of this article is to attempt an explanation of why this is so. The actual differences themselves will not be looked at in any great detail.

The differences are of three kinds: differences in the rate of adoption of consolidated accounts; differences in what is published by companies; and differences in the techniques of consolidation.

The practice of consolidation has been adopted at very varying rates. In the USA consolidated accounts have been established since the turn of the century. In the UK the first examples are not found before the 1920s and they did not become a legal requirement until 1948. They are now however well established. The Dutch experience has been much the same except that there was no legal compulsion until as late as 1970. In Germany consolidation was first introduced in the 1930s but did not become common until legally required by the Companies Act of 1965. In France legal regulations are still almost entirely lacking and consolidation has become the norm only in the mid-1970s.

There is little uniformity in what is actually published. American companies produce detailed consolidated balance sheets, statements of income and statements of changes in financial position but do not publish the holding company's accounts as well. In both the UK and the Netherlands the holding company's balance sheet is published as an addition

to the consolidated one but little or no information is given of the holding company's profit and loss account. Consolidated funds statements are required in the UK by the accountancy profession though not yet by law. Large Dutch companies also typically publish a consolidated funds statement. In Germany it is usual to publish the balance sheets and profit and loss accounts of both the holding company and the *domestic* group. The consolidation of foreign subsidiaries is optional and uncommon. Some of the largest German companies publish three sets of accounts: one set for the holding company, one for the domestic group and one for the whole group. French companies which publish consolidated accounts still tend to regard them as an appendage to the accounts of the holding company. Both consolidated balance sheets and consolidated profit and loss accounts are published.

Techniques of consolidation also differ, although the methods of 'acquisition accounting' practised in the USA, UK and the Netherlands are quite similar. 'Merger accounting' (pooling of interests) is, however, popular only in the USA. A number of examples of differences of technique can be cited. The concept of 'goodwill on consolidation' does not really exist in German and French accounting. Instead a 'consolidation difference' is calculated each year (but the calculation is not quite the same in the two countries). Equity accounting is not practised in Germany. In the Netherlands it is used in the holding company's accounts as well as the consolidated accounts. In France, where it is called *mise en équivalence*, the calculation is based on the net assets of the subsidiary not on the cost of the shares plus a share of the retained profits. The use of 'proportional consolidation' (i.e. bringing into the consolidated balance sheet a proportion only of an investee's net assets) is relatively common in France, uncommon in the Netherlands, very rare in the UK and illegal in Germany.

¹International Accounting Standards Committee, *IAS3 - Consolidated Financial Statements* (1976); Commission of the European Communities, *Proposal for a seventh Directive pursuant to Article 54 (3) (g) of the E.E.C. Treaty concerning group accounts* (April 28, 1976).

Diffusion of accounting thought and practice

To explain these differences, it is necessary to consider the general question of the diffusion of accounting thought and practice. How are new accounting thought and new accounting practice developed, adopted and transferred from one country to another?

Such transfers involve what sociologists have called 'change agents' and 'recipients'. According to Niehoff² the most important factors in the process are:

From the change agent's point of view:

- (a) the methods of communication he uses;
- (b) the kind of participation he obtains from the recipient; and
- (c) the manner in which he uses and adapts his innovation to the existing cultural patterns.

From the recipients' point of view:

- (d) whether they feel a need for the new thought or practice;
- (e) whether they perceive any practical benefit in adopting a change; and
- (f) whether their traditional leaders are brought into the planning and implementation of the process.

There are a number of possible change agents. 'Historically', writes Bedford, 'the process by which accounting procedures and thought have been transmitted from one country to another has been by the physical transfer of accountants'.³ British accounting skills, for example, were transferred to the USA at the end of the nineteenth century by representatives of British firms sent across the Atlantic. The human element is stressed by many writers: 'The mechanism of technological change', writes Burns, 'is one of agents not agencies; of the movement of people among establishments rather than of the routing of information through communication systems'.⁴

During the twentieth century the international accounting firm has developed as the most effective change agent. As we shall see later, Price Waterhouse & Co. has played an important part in the international transfer of the techniques of consolidated accounts. Other possible change agents are:

- (a) international organisations of accountants such as

the International Accounting Standards Committee and the UEC;

(b) governmental agencies: the French *Conseil National de la Comptabilité* and the *Commission des Opérations de Bourse* have played notable parts, for instance, in the encouragement of consolidation accounting in France;

(c) multinational companies;

(d) teachers and their textbooks: late nineteenth century American accountants learned much from British books; a number of modern American textbooks have achieved a worldwide circulation and have been translated into several languages.

It has been argued, however, that one cannot assume the existence of a common fund of technical knowledge available to anybody to use by applying his individual skill. The capacity to use technical knowledge is still largely acquired by direct exposure to and participation in the work process. This is especially true where, as in accounting practice, there is no professional incentive to publish the results of one's work quickly and authoritatively.⁵

Accounting thought may be more easily transferred than an accounting practice and may often precede it. Accounting practice at any one time may be imbedded in the laws and business customs of a country to such an extent that immediate change is not within the realms of possibility.⁶ Until recently, for example, French writing on the problems of consolidation accounting was in advance of French practice.

Change agents must not only possess, or have access to, the necessary technical ability to develop a new practice; they must also have sufficient 'political' power to ensure its adoption. (The practice is 'new' in the sense that it is perceived as new by the recipients; it will often in fact already exist elsewhere.) Technical ability in consolidations resides with accountants and the change agents must either consist of or include such persons or be able to obtain their cooperation. Political power rests with those who by legal regulation or by other means can enforce or encourage the introduction of new practice. They are not necessarily accountants.

Rate of diffusion

The rate at which a new accounting practice or innovation such as consolidated accounts is adopted

²Arthur H. Niehoff, *A Casebook of Social Change* (Chicago: Aldine Publishing Co., 1966), pp. 40-41.

³N. M. Bedford, 'The International Flow of Accounting Thought', *International Journal of Accounting*, Spring 1966, p. 2.

⁴Tom Burns at p. 12 of William H. Gruber and Donald G. Marquis, *Factors in the Transfer of Technology* (Cambridge, Mass.: The M.I.T. Press, 1969).

⁵N. Rosenberg, 'Economic Development and the Transfer of Technology: Some Historical Perspectives', *Technology and Culture*, vol. 11, 1970, p. 555.

⁶N. M. Bedford, op. cit., p. 4.

will depend upon its characteristics. These include:⁷

- (a) relative advantage
- (b) compatibility
- (c) complexity
- (d) trialability
- (e) observability
- (f) freedom from regulation

Each of these is discussed and explained below.

Relative advantage is the degree to which an innovation is seen by its adopters to be superior to the thought and practice which it supersedes. Consolidated accounts have advantages for the internal control of a group of companies but in the absence of a lively capital market directors may perceive few advantages, and some disadvantages, in publishing them to a wider audience.

Compatibility is the degree to which an innovation is consistent with the existing values, past experiences and needs of the adopters. Where an innovation is in fact the adoption of an accounting practice developed by others there may be resistance. The innovation may be seen as part of an alien legal system. Its source may be suspect: 'can there be any good thing come out of Nazareth?' Countries may, for example, be loth to borrow ideas from their former colonies and, of course, there are often difficulties with a flow of ideas in the opposite direction. It is possible that the American nature and later the Anglo-Saxon nature of consolidated accounts may have hindered their adoption in some countries. Countries and companies may have varying degrees of willingness to innovate or to adopt the accounting innovations of others.

Complexity is the degree to which an innovation is perceived as being relatively difficult to understand and use. Consolidated accounts are very complex. Even in the 1970s there is evidence of this hindering their speedy adoption. The 1972 Report and Accounts of the Compagnie Financière de Suez contained the following statement:

Because of the extent of the work involved, we are unable to present at this Meeting [May 22, 1973] our consolidated Balance Sheet and Accounts as at December 31, 1972 . . .

We published a booklet on our consolidated accounts as at December 31, 1971, which was greatly appreciated, particularly abroad. We intend to continue this practice annually and shall let you know as soon as these accounts appear.

[They were published in September 1973]

Trialability is the degree to which an innovation may be tried on a limited basis. Consolidated accounts have a relatively low degree of trialability, although they can be, and no doubt often are, prepared for internal use but not published in those countries where publication is still optional. Consolidation can also be limited by the exclusion of foreign subsidiaries or associated companies.

Observability is the degree to which the results of an innovation are easily observed and communicated to others. Despite the complexity of the techniques, details of how to prepare consolidated accounts and, of course, the end result, have long been readily available. Even where unpublished, techniques have been diffused by international accounting firms (see below). For non-English speaking countries, differences of language may be a serious barrier. (And how many British or American accountants find it easy to read the standard German or French texts on accounting?)

Freedom from regulation is the degree to which innovation is assisted by the lack of perceived or actual legal and regulatory barriers. The publication of consolidated accounts has nowhere been banned by law but a positive obligation to publish the holding company's accounts or to publish limited consolidated accounts (omitting, for example, foreign subsidiaries) may hinder the publication of a complete set of consolidated accounts. Britain before the Companies Act 1948 is an example of the former; West Germany today is an example of the latter.

There are two possible reasons why a transferred innovation, or an innovation re-invented independently, should differ from the original. The first is that the problems to be solved may be different or at least be perceived to be different. The second is that techniques developed in isolation may, to use a linguistic analogy, develop as 'dialects'. In support of the first explanation, it could be argued that 'proportional consolidation' developed in France because, unlike the USA and the UK, the typical 'subsidiary' was a joint venture closely held by a few 'parents'. Rather less convincingly it could be argued that 'pooling of interests' developed in the USA because the merging of companies of approximately equal size was more common there than in Europe. It is perhaps more realistic to regard pooling of interests as a separate innovation whose rapid adoption in the USA is easily explained by its relative advantage, its relative lack of complexity and freedom from regulation. The French variant of equity accounting (*mise en équivalence* – described on p. 203 above) may be cited as an example of a dialect.

⁷The first five are derived from E. M. Rogers with F. F. Shoemaker, *Communication of Innovations* (New York: The Free Press of Glencoe, 2nd ed., 1971). See also C. A. Tritschler, 'A Sociological Perspective on Accounting Innovation', *International Journal of Accounting*, Spring 1970.

Historical development of consolidation accounting

We turn now to a consideration of consolidation accounting as it developed in the USA, UK, Germany, France and the Netherlands.

The change which created the need for consolidated accounts was the development of the holding company with the consequence that commercial and industrial operations have become normally carried on not by individual companies in isolation but by groups of companies. The change occurred first in the United States during the wave of mergers at the turn of the 20th century. 'The main feature of the combinations of this period', writes Wyatt in his study of accounting for business combinations, 'was the holding company, a corporate structure to control the operations of the various operating units falling within its framework. The holding company was typically not an operating unit, its assets consisting basically of its investment in the shares of a number of operating units, or possibly in subholding companies'.⁸

Accountants, though not as professional bodies, appear to have acted as the change agents. Garnsey (see below) stated in 1931 that in the first instance the practice of consolidation had little support except from accountants. They appear to have had little difficulty, however, in persuading directors to publish consolidated statements. The relative advantage at that time was presumably internal rather than external. The USA at this time had a social system in which innovation was highly regarded, and there were no legal or other regulatory barriers. On the other hand the new techniques of consolidation accounting must have appeared complex and difficult to try on a limited basis.

According to Bores,⁹ consolidated balance sheets were first published by the American Smelting and Refining Company (1899) and the Union Pacific Railroad Company (1900). The United States Steel Company, chartered in New Jersey in 1901, published consolidated statements from its inception and set a pattern. Among the accountants the influence of Arthur Lowes Dickinson (an English chartered accountant) of Price Waterhouse & Co., New York was especially important.¹⁰

In Europe the holding company developed much more slowly:

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... the holding company never assumed the same significance in Europe as it did in the United States. Reasons for this are the more limited use of the stock company as a form of business enterprise and the greater degree of legal regulation and governmental supervision over the formation of corporations, the issue of securities and all other phases of corporate activity. Also the railroads and public utilities, a favourite field for the operation of holding companies in the United States, were and still are government owned in most European countries; and even where privately owned, as in England and France, they were and still are removed from financial manipulation and stock market speculation to a greater extent than in the United States. Furthermore the object of monopolistic control, which was the moving spirit behind many a holding company in the United States, could at least in most European countries be reached through the organization of cartels. Seldom therefore was the holding company used for the purposes of obtaining monopoly; the Nobel Trust Co., Ltd., and the Reis-und Handels-A.-G., a trust of German rice millers, remained isolated phenomena up to the [first] World War.¹¹

The development of consolidated accounts in Britain has been discussed by Bores and more recently by Kitchen.¹² Progress was much slower than in the United States. It was not until the period 1915-21 that the holding company became an important form of business organisation. Nobel Industries Ltd. (one of the predecessors of ICI) appears to have been the pioneer of consolidation in the early 1920s. The first British book on the subject, *Holding Companies and Published Accounts* by Gilbert Garnsey (of Price Waterhouse & Co., London) was published in 1923, by which time consolidation had, as Garnsey himself stated, become almost universal in the USA. When company law was reformed in 1929, consolidated accounts were not introduced as a legal requirement. The publication of the Dunlop consolidated accounts in 1933 represented an important step forward.

Both the need for the new technique and its recognition came more slowly in Britain than in the United States. As in the latter country, companies gained little external relative advantage. A change in accounting practice was less compatible with the

⁸A. R. Wyatt, *A Critical Study of Accounting for Business Combinations* (New York: AICPA, 1963) (ARS 5), p. 1.

⁹W. Bores, 'Geschichtliche Entwicklung der konsolidierten Bilanz (Konzernbilanz)', *Zeitschrift für handelswissenschaftliche Forschung*, vol. 28, 1934.

¹⁰Consolidated accounts are dealt with in ch. VIII of his *Accounting Practice and Procedure* (New York: Ronald, 1914).

¹¹R. Liefmann, 'Holding companies - Europe', *Encyclopaedia of the Social Sciences*, vol. VII (1934/5) p. 410.

¹²J. Kitchen, 'The accounts of British holding company groups: development and attitudes to disclosure in the early years', *Accounting and Business Research*, Spring 1972. See also his 'Consolidated Accounts and Disclosure: Retrospect and Prospect', *Accountancy*, January 1973.

cultural values of the British social system. As Garnsey stated: 'the natural reluctance of the people of this country to change is too well known to require any comment'. (1923 ed., p. 59)

Kitchen suggests that Garnsey's relative youth (he was 40 when the first edition of his book was published) and his association with governmental and quasi-governmental institutions and enquiries 'made him something less than acceptable in the early 'twenties as a man able to speak for the accountancy profession, at least in the eyes of its more traditional members' (p. 115). His immediate influence on practice was certainly much less than Arthur Lowes Dickinson's (also, it will be recalled, of Price Waterhouse) had been in New York. It may also be suggested that British accountants, convinced of their own superiority, were not too receptive to American innovations.

As already noted, consolidation accounting is neither simple nor easy to try on a limited basis. Nor is it easily observed and described, though certainly the technical ability was readily available in the larger accounting firms. The political power did not, however, rest with accountants. It was the directors who were responsible for published accounts in Britain and it was on them that Garnsey placed the blame (2nd ed., 1931, p. 103).

The existence of a perceived, though not actual, legal barrier may have played a part. Kitchen (p. 123) quotes Dickinson's view that the obligation (not present in the USA) to publish the holding company's own balance sheet may have acted as a deterrent in Britain to the adoption of consolidated accounts.

The development of consolidation came even later in continental Europe. The earliest examples quoted by Bores are Norsk Hydro, Oslo; Wm. H. Müller & Co. of the Hague (1926); and the Continentale Linoleum Union, Zurich (1928). German companies did not start consolidating until the 1930s and were not obliged by law to do so until the mid 1960s. The first important book on consolidations was A. Hoffmann's *Die Konzern-Bilanz* (The consolidated balance sheet) published in 1930. French companies were even slower. For example, the 1968 report of Compagnie Française des Pétroles contained summaries of the 1965, 1966 and 1967 consolidated statements but not those of 1968, whereas the 1967 had not included any consolidated statements at all.

The number of quoted French companies publishing consolidated financial statements has grown as follows:¹³

1967	22	1972	163
1968	44	1973	216
1969	64	1974	232
1970	74	1975	267
1971	104	1976	292

Some companies (46 in 1976) published a consolidated balance sheet only.

It is interesting to note that according to Bores the consolidated statements of Wm. H. Müller & Co. were prepared according to American accounting principles, and that the majority of its subsidiaries were audited by Price Waterhouse & Co.

Today, Price Waterhouse help to prepare, but do not audit, the consolidated accounts of a number of French companies (e.g. Compagnie Financière de Suez, mentioned above) who have chosen to adopt Anglo-Saxon consolidation techniques. (Twelve French companies referred in 1975 to the use of such techniques.¹⁴)

The end of national differences?

It is not the purpose of the present article to discuss whether national differences in consolidated accounts are undesirable and, if so, how they should be ended. As noted in the first paragraph, attempts in this direction are currently being made by the International Standards Committee (IAS 3 – Consolidated Financial Statements) and the Seventh Directive on company law proposed by the European Commission and still in draft form. A discussion and comparison of these attempts must be postponed to later articles.

Acknowledgement

Financial assistance from the Research Committee of the Institute of Chartered Accountants in England and Wales is gratefully acknowledged.

¹³Reports of the *Commission des Opérations de Bourse*, 1974, 1975 and 1976.

¹⁴Ibid, 1975, p. 168.



The Lease Evaluation Solution: a Further Comment

G. Burrows

Recent articles in this journal by Bloomfield and Ma (B & M),¹ and Grinyer,² together with shorter comments by Bowles³ and Middleton,⁴ show that interest in the problem of lease evaluation continues unabated. The fact that this interest has yet to result in any consensus can be judged from the fact that each of these writers has, at various times, proposed a different solution to the computer leasing problem originated by Middleton.⁵ With this diversity of approaches as the background, this article will examine the solutions proposed by B & M, Grinyer,⁶ and Bowles and show that each is defective in at least one important respect. From an examination of the defects in these solutions a further solution will be proposed which, it is contended, is superior to those discussed. Finally, it will be questioned whether, in the light of empirical information about the rôle of leasing, a general solution to the lease problem is possible.

Turning first to the solutions proposed by B & M and Grinyer, an inconsistency which occurs in both is that while they assume that the weighted average cost of capital is the investment criterion rate, and thus the rate to be used to discount the cash flows of projects which do not change a firm's business risk, neither uses this rate when calculating the relative

costs of leasing and borrowing. In Grinyer's solution this inconsistency takes the form of using the borrowing rate to discount cash operating expenses, tax deductions and salvage values which differ as between leasing and borrowing, whereas in the investment evaluation these same items are presumably discounted at the weighted average cost of capital. In this matter B & M go to the opposite extreme and use the much higher cost of equity to discount the differential after-tax operating expenses and salvage values whereas, again, the implication is that they would discount these items at the weighted average cost of capital in the investment decision.

The only defence that B & M and Grinyer could make to this charge of inconsistency is that of 'different treatments for different purposes', but it is doubtful whether this defence has any validity in the context of the choice between leasing and borrowing. Conventionally, the costs of the different sources of funds which comprise a firm's capital structure are determined with reference to what could be called their explicit financing charges, interest in the case of debt and dividends in the case of equity. In the investment decision these explicit financing charges are removed from cash flows and projects are evaluated on the assumption that they are financed from the firm's general pool of funds. This assumption, of course, applies also to finance for operating expenses. While B & M and Grinyer apparently accept these assumptions when making the investment decision, their financial decisions (whether to lease or borrow) are based on the view that operating expenses are not obtained from the firm's general pool of funds and that finance costs do not consist solely of explicit financial charges. Given these manifest inconsistencies in the way that their investment and financing decisions are made, it is difficult to see how these decisions can be reconciled. If their investment decisions are correct then their financing decisions must be wrong, or *vice versa*. Both decisions cannot be correct simultaneously.

¹E. C. Bloomfield and Ronald Ma, 'The Lease Evaluation Solution', *Accounting and Business Research*, Autumn 1974.

²John R. Grinyer, 'The Lease Evaluation Solution: A Comment and Alternative', *Accounting and Business Research*, Summer 1975.

³G. N. Bowles, 'Some Thoughts on the Lease Evaluation Solution', *Accounting and Business Research*, Spring 1977.

⁴K. A. Middleton, 'Lease Evaluation: Back to Square One', *Accounting and Business Research*, Spring 1977.

⁵In addition to the above see also G. N. Bowles, 'On Lease Evaluation', *Chartered Accountant in Australia*, August 1974, and K. A. Middleton, 'The Evaluation of Leasing Proposals', *Australian Accountant*, April 1972.

⁶Comments made on Grinyer's solution can also be taken as applying to Middleton's. These solutions differ only in minor respects.

From this analysis it follows that in situations in which the weighted average cost of capital is the investment criterion rate, and neither the project nor the method by which it is financed will alter a firm's business risk, then a 'correct' lease solution should discount at the weighted average cost of capital those after-tax operating expenses and salvage values which differ as between leasing and borrowing. The solution proposed by Bowles adopts this treatment but appears to be defective for other reasons which will now be examined.

Bowles' solution requires a comparison between lease payments and a debt repayment schedule which approximates that of the lease. The difference between these streams is then discounted at the weighted average cost of capital. The rationale for using the cost of capital for this purpose is that, to the extent that repayments differ as between leasing and borrowing, a firm's capital structure differs under the two arrangements and any difference must be offset by raising further debt and equity. The use of the cost of capital as the discount rate in this context thus 'maintains' the capital structure. What this treatment overlooks is that, regardless of differences between the amounts effectively borrowed under the two arrangements and hence in their repayments, leasing and borrowing are considered to be equivalent by the capital market (see assumption 6 of the Bloomfield-Ma and Grinyer articles) with the implication that there is no need to raise additional equity to maintain the capital structure – it is regarded as being identical under the two arrangements. It is suggested, therefore, that this aspect of Bowles' solution is inconsistent with the view of the capital market that leasing and borrowing are equivalent in terms of their effects on capital structure and on the cost of equity.

Another debatable aspect of Bowles' solution, and one which follows from his assumption that the choice between financing arrangements is an investment decision, is that it includes debt interest in the borrowing cash flow stream and discounts this by the weighted average cost of capital. This seems to be contrary to the view of the capital market, endorsed by the firm in its cost of capital calculation, that outlays for debt principal and interest should be discounted at the cost of debt.

A more valid method of comparing the 'principal' components of the borrowing and leasing alternatives is suggested by Grinyer's model. This would require lease payments, net of tax and operating expenses, to be discounted at the after-tax borrowing rate. This removes the interest component from the lease and facilitates comparison with the cash price of the asset which is the amount which would have to be

borrowed, exclusive of interest, in order to acquire it.

From this suggested treatment of the principal and interest components of the alternatives, together with the treatment of the differential operating items discussed previously, a lease solution emerges. Such a solution would be appropriate to situations in which a firm uses a single rate, the weighted average cost of capital, in investment evaluation but could easily be modified where multiple rates are used for this purpose. The important point is that items common to both the investment and financing decisions should be given similar treatments in each. Appendix A shows this solution applied to Middleton's problem and Appendix B consists of a simple model of this solution.

A final comment that can be made on the solutions discussed in this article is that, like other works on leasing, they are based on the assumption that borrowing and leasing are treated as equivalent by the capital market, especially in regard to the amount of debt capacity displaced by leasing.⁷ A recent empirical study on attitudes to leasing conducted by Fawthrop and Terry⁸ casts some doubt on this assumption. The majority of financial managers who participated in their study would have excluded lease liabilities from calculations of debt/equity ratios. 'Typical' reasons that were given for this exclusion seemed to amount to a belief that the omission of leases from financial statements meant that leasing did not use up a corresponding amount of debt capacity. The implication of this is that leasing may be a means by which firms can increase gearing without increasing their cost of capital.⁹ Clearly this is an area in which more information is required, but the findings of Fawthrop and Terry suggest that lease solutions based on the equivalence of leasing and borrowing should be treated with some circumspection.

To sum up, it has been argued that lease solutions proposed in previous editions of this journal contain errors and inconsistencies, and that the removal of these defects leads to a solution which is 'correct' in relation to prevailing assumptions about the rôle of lease finance. Evidence has also been cited which casts some doubt on the validity of one important assumption on which most lease solutions, including the one proposed in this article, have been based.

⁷The alternative solution proposed by Grinyer envisages the situation where the two forms of finance are not considered to be equivalent. See Grinyer, p. 233.

⁸R. A. Fawthrop and Brian Terry, 'Debt Management and the Use of Leasing Finance in U.K. Corporate Financing Strategies', *Journal of Business Finance and Accounting*, Autumn 1975.

⁹In these circumstances the Bloomfield-Ma solution might be appropriate.

Appendix A

The problem

A firm can buy a computer for \$1,600,000 or lease it for five years which will require the following annual payments:

End of year	Lease payments
0	\$500,000
1	500,000
2	400,000
3	400,000
4	300,000

The lease payments include charges for maintenance and insurance of \$40,000 per annum which would have to be paid if the computer were owned. The estimated residual value of the computer in five years time is \$300,000 and depreciation for tax purposes is 15% per annum using the straight line method. There is a one year lag in tax relief. The rate of company tax is 50%. The firm's weighted average cost of capital is 15% and its after-tax borrowing rate is 4%.

Solution*

Lease outlays:

Year	Lease payments less operating expenses	Tax savings	Net cash flow	P.V. at 4%
0	\$460	—	\$460	\$460
1	460	\$230	230	221
2	360	230	130	120
3	360	180	180	160
4	260	180	80	68
5	—	130	(130)	(107)
				<u>\$922</u>

Borrowing outlays:

Year	Outflow	Depreciation tax saving	Net outflow	P.V. at 15%
0	\$1,600	—	\$1,600	\$1,600**
1	—	—	—	—
2	—	\$120	(120)	(91)
3	—	120	(120)	(79)
4	—	120	(120)	(69)
5	(300)	120	(420)	(209)
6	—	170	(170)	(73)
				<u>\$1,079</u>

* This solution, unlike Grinyer's, assumes the same timing for maintenance and insurance included in

lease payments but which would have to be paid for separately in the borrowing alternative. This more realistic assumption simplifies presentation by allowing these items to be contraed and does not significantly affect the result.

** This amount would be calculated by discounting borrowing repayments and interest, after tax, by the after-tax borrowing rate of 4%.

As the present value of cash outlays arising from borrowing exceed those arising from leasing the leasing alternative will be preferred.

Appendix B

Simple model of lease solution

The symbols used in the model are as follows:

C = Cash price of asset (principal sum borrowed if asset bought).

A = Present value of after-tax lease payments, net of operating expenses, discounted at after-tax borrowing rate.

W = Written down (book) value of asset at time T.

S = Estimated salvage value of asset at time T.

O_t = Operating expenses included in lease payments at time t.

P_t = Operating expenses at time t if asset is bought.

D_t = Depreciation allowance for tax purposes at time t if asset is bought.

k = Weighted average cost of capital.

a = Company tax rate.

T = Useful economic life of asset.

The present value at time t = 0 of outlays associated with leasing is:

$$PV(L) = A + \sum_{t=0}^T \frac{O_t(1-a)}{(1+k)^t}$$

The present value at time t = 0 of outlays arising from borrowing is:

$$PV(B) = C + \sum_{t=0}^T \frac{P_t(1-a) - aD_t}{(1+k)^t} - \frac{S - a(S - W)}{(1+k)^T}$$

When PV(L) > PV(B) the borrowing alternative will be preferred.

when PV(B) > PV(L) the leasing alternative will be preferred.

The Lease Evaluation Solution: Continued*

John R. Grinyer

Since my earlier paper¹ on the contribution by Bloomfield and Ma² (B & M) there have been a number of comments on the B & M model and on my proposals.

Middleton,³ Bowles⁴ and Burrows⁵ have all found fault with the B & M solution. The first named broadly agrees with me but both Bowles and Burrows have different approaches to mine. This note considers their papers and expands on the analysis of my earlier contribution when discussing Middleton's comment.

The Middleton/Grinyer model

I am pleased that Middleton has directed our attention to his earlier paper⁶ because, although it is based on analysis of very different form and argument to my own, it embodies the same perception of the financial alternative to leasing and reasons to similar conclusions so far as recommendations for practice are concerned. As he says in his comment, this does present independent support from two sources. Other authors⁷ have suggested approaches which are similar to ours, so the general line of thinking appears to be acceptable to many theorists. Differ-

ences exist, of course, so far as the details of the models are concerned.

Middleton correctly points out that I erred in showing a tax saving on the notional sale proceeds, when constructing my arithmetical example. Fortunately the error does not affect the validity of the approach and its correction increases the difference in the results of the alternative computations considered. He, and other commentators, have been kind in refraining from mentioning other errors of commission and omission in my original paper.⁸

I agree with Middleton's general point about taxation. The difference arising from recognising lags in tax payments is very small with low rates of interest, however. Assume, for example, that B is the amount borrowed, a the constant Corporation Tax rate, r the gross rate of interest and N the net proceeds of borrowing, then the after tax rate for a loan repayable at the end of n periods is i* in

$$N = \frac{rB}{1+i^*} + \sum_{t=2}^n \frac{rB(1-a)}{(1+i^*)^t} + \frac{B}{(1+i^*)^n} \quad \text{Eq. 1}$$

$$- \frac{arB}{(1+i^*)^{n+1}}$$

This equation assumes repayment at par, a constant rate of tax and a one period lag in tax relief. The rate i of the earlier analysis was based on an assumption of no lag in tax relief, i.e. it is found from equation 2.

*The author wishes to thank his colleagues A. A. Lonie and I. W. Symon for their helpful comments.

¹J. R. Grinyer, 'The Lease Evaluation Solution: a Comment and Alternative', *Accounting and Business Research*, Summer 1975.

²E. C. Bloomfield and R. Ma, 'The Lease Evaluation Solution', *Accounting and Business Research*, Autumn 1974.

³K. A. Middleton, 'Lease Evaluation: Back to Square One', *Accounting and Business Research*, Spring 1977.

⁴G. N. Bowles, 'Some Thoughts on the Lease Evaluation Solution', *Accounting and Business Research*, Spring 1977.

⁵G. Burrows, 'The Lease Evaluation Solution: a Further Comment', *Accounting and Business Research*, this issue.

⁶K. A. Middleton, 'The Evaluation of Leasing Proposals', *Australian Accountant*, April 1972.

⁷e.g. H. Bierman and S. Smidt, *The Capital Budgeting Decision*, 2nd edition, Collier-Macmillan, 1969, pp. 218-230 and J. C. Van Horne, *Financial Management and Policy*, Prentice-Hall, 3rd edition, 1974.

⁸A number of errors appeared on page 233 of my comment in *Accounting and Business Research*, Summer 1975. These were:

Left-hand column

- (a) Lessors will be bearing some of the business risk if the cash flows associated with operating expenses which they pay and depreciation tax shields are more uncertain than cash flows arising with loan alternatives. The adoption of leasing may, then, imply a benefit to equity holders and not a cost as I originally suggested.

Right-hand column

- (b) line 5 - 'Equation 4' should read 'Equation 5'.
 (c) line 12 - 'advantageous' should read 'disadvantageous'.
 (d) line 35 - 'M* - L₀(1-a)' should read 'M* + L₀(1-a)'.

$$N = \frac{rB(1-a)}{1+i} + \sum_{t=2}^n \frac{rB(1-a)}{(1+i)^t} + \frac{B}{(1+i)^n} \quad \text{Eq. 2}$$

The only differences between the cash flows depicted in Equations 1 and 2 are the sums arB in each of years 1 and $n+1$. With low rates of interest the differences in solution rates are likely to be insignificant and even with high rates may be insufficiently large to justify recognition given the uncertainty implicit in the tax rates. Equation 1 defines the more correct after tax cost of debt rate; my paper adopted the more conventional rate i to avoid adding to the analysis.

Under our approach the cash purchase price is, by definition, equal to the proceeds of the alternative borrowing. This is recognised by Middleton who is, therefore, recommending the same figures derived from the same sources as I used. He seems to be arguing about wording when he takes issue with my use of the cash price to define the inflow from leasing. Of course it may be that his choice of description is a more effective means of communicating the relevant concepts – if the reader thinks that that is so the obvious answer is to use his terminology.

In my opinion, the criticisms made in Middleton's paper are relatively trivial compared with the major problem of the Middleton/Grinyer model, which was identified in my article. That problem arises from the likelihood of differing risk characteristics of the cash flows associated with the lease and the borrowing alternative. This topic can be analysed in more detail than in my earlier contribution, as shown below:

The cash flows associated with leasing were identified, in equation 5 of my earlier comment, as

$$\sum_{t=0}^T [(L_t - O_t)(1-a) + a D_t] \quad \text{Eq. 3}$$

where L_t are the payments under the lease in year t ,
 O_t are operating costs borne by the lessor in year t ,

D_t is the depreciation allowance for tax purposes in year t ,

T is the number of periods until the occurrence of the final cash flow associated with the lease

and other terms are as previously defined. Time lags in the payment of tax have, again, been ignored – but can be accommodated in an extended analysis.

Identical cash flows of identical risk are logically valued at identical amounts. Acceptance of this concept implies the acceptance of the rule that cash flows with the same risk characteristics should be evaluated at the same discount rate. On this basis,

if they have the variability characteristics of the net cash flows included in the D.C.F. evaluation of the asset to be financed, a case could be argued for discounting the flows $O_t(1-a)$ at the discount rate used in that evaluation. On the other hand, the amounts involved in O_t may be of a contractual nature so that the debt rate might be more appropriate in the context of the financing decision. It must be recognised that there may be implicit costs of debt finance in addition to the explicit costs discussed above. However, as we define debt capacity by reference to cash flows, we can discount at the explicit cost of debt when comparing financing alternatives with cash flows of identical risk. This would imply an assumption that we are able to arrange for alternatives to have identical patterns of cash flows. We can then argue that the implicit cost per £1 of present value will be the same for each financing alternative, so that the comparison between the alternatives is validly made using the explicit cost alone. Clearly judgement is required to interpret the risk characteristics of the flows O_t .

Many leases do not involve terms under which operating expenses are paid by the lessor, in which case Equation 3 can be shortened to

$$\sum_{t=0}^T [L_t - a(L_t - D_t)] \quad \text{Eq. 3a}$$

We continue our discussion on the basis of Equation 3a, which depicts a situation frequently met within the UK. The cash flows for the borrowing alternative can be defined as

$$\sum_{t=1}^T [r(B - \sum_{n=0}^{t-1} P_n)(1-a) + P_t] \quad \text{Eq. 4}$$

which equals

$$\sum_{t=1}^T [(rB - r \sum_{n=0}^{t-1} P_n + P_t) - a(rB - r \sum_{n=0}^{t-1} P_n)] \quad \text{Eq. 4a}$$

where P_t is the repayment of principal in period t and other terms are as previously defined. Comparison of Equations 3a and 4a indicates the extent to which the flows have differing risks. The first parenthesis in 4a contains terms entirely determined by the borrowing contract, and can be considered to be of precisely equivalent risk to that of L_t . Similarly the terms in the last parenthesis of both equations are fixed by contract or existing legislation and are therefore of similar certainty. We can therefore argue that, for financial leases, the difference in

certainty derives entirely from the possibility of changing tax rates associated with the different patterns of cash flows under the latter parentheses.⁹ Such differences may not be sufficient to justify discounting leasing flows at a rate different to that derived from borrowing opportunities.

One must judge how far the differences identified merit the use of different rates for the different elements of the cash flows. I would anticipate that the after tax borrowing rate i was usually the appropriate one to apply to the flows $L_t (1 - a) + aD_t$.

The Bowles comment

Although Bowles accepts that the logical alternative to leasing is borrowing, he dislikes the way in which B & M make their comparison between the alternatives. He proposes that a notional liability, at the end of each period in the analysis, should be established by reference to the lease before tax cash flows and the nominal rate of interest on the lease. A notional debt cash stream would then be constructed using the liabilities under the lease and the explicit interest rate on debt. The difference between the debt and leasing streams, when discounted at the weighted average cost of capital (WACC), would show the net advantage of leasing.

This approach could have *some* value if the market estimated debt capacity in the way envisaged by Bowles. That would require that market participants looked only at contractual flows and rates and not at the underlying economic reality. In the UK the lessor will probably obtain the tax shield on the entire capital cost approximately one year after the initial expenditure, and such a significant cash flow will usually mean that his actual rate of return is substantially higher than the nominal rate established by reference to the contractual flows. It is for this reason that the lessor is often able to quote nominal rates which appear advantageous compared to borrowing alternatives – a phenomenon apparently so common that Bowles includes it in his example without comment. The economic reality is that differential cash flows arising from taxation are also associated with the alternative and would sensibly be recognised by market participants. Whether the reader should follow B & M, Bowles, Middleton and Grinyer or others must ultimately depend on his judgement on whether the market and management recognise gearing by reference to contractual bases or to cash flows. I prefer to consider that manage-

ment and the market act on rational bases, i.e. consider all associated cash flows.

The use of the WACC to discount differential financing flows may not be supportable. If one accepts the Bowles gearing model and believes that the cost of equity is unaffected by gearing it would seem appropriate to use the cost of equity as B & M suggest. If gearing has some effect on the cost of equity, but not as much as is hypothesised by the Modigliani – Miller and Capital Asset Pricing models excluding taxation,¹⁰ a rate falling between the firm's cost of equity and the explicit cost of debt may be appropriate. Such a rate might be the WACC only by coincidence.¹¹

The Burrows review

Burrows presents a brief review of the sequence of articles, attacks all previous papers for logical weaknesses and proposes a further analytical approach. He also questions the validity of the general approach which we have all adopted, on the grounds that it does not gain empirical support from the work of Fawthrop and Terry.¹² This article will only consider the criticisms levelled at the Grinyer model, the Burrows model and the practical irrelevance arguments.

The main criticism which Burrows levels at the Grinyer model is that it is inconsistent in discounting operating flows at the cost of debt when they have been discounted at the WACC when performing the investment appraisal. I would argue that such an inconsistency does not exist because, as he anticipated, it is correct to use 'different treatments for different purposes'. This paper has already mentioned the relevance of the cost of debt for discounting operating expenses paid by the lessor, and that matter was raised in the original Grinyer comment. For investment appraisal purposes, the operating costs borne by the lessor and the tax shields are included with many other cash flows to obtain a single set of cash flows over time. The rate which is appropriate for discounting that set may be deemed to be an average of the rates which would be appropriate for the risk implicit in each component

¹⁰See Robert S. Hamada, 'Portfolio Analysis, Market Equilibrium and Corporation Finance', *Journal of Finance*, March 1969, pp. 13-31.

¹¹This topic is complex and will not be developed further in this paper. The choice of rate will depend on one's beliefs concerning capital market behaviour and on the objectives assumed for management.

¹²R. A. Fawthrop and B. Terry, 'Debt Management and the Use of Leasing Finance in UK Corporate Financing Strategies', *Journal of Business Finance and Accounting*, Autumn 1975.

⁹This, of course, assumes that the firm will always make taxable profits.

which goes to make up a single figure of annual cash flow.¹³ This argument assumes that the analyst is using a discount rate which includes a risk premium, but that follows naturally from Burrow's suggestion that the WACC be used. Thus there is no inconsistency in discounting one part of a cash stream at a different rate to the one adopted for the stream as a whole, for the latter rate represents the weighted average of rates which includes the one selected for the part in question. I think that Burrow's criticism is not, therefore, soundly based. My discussion under the Middleton/Grinyer model section of this paper introduced a more plausible basis for criticism of the use of the unadjusted after tax cost of debt.

The essential difference between the Grinyer and the revised Burrows models is merely that Burrows uses the WACC instead of the cost of debt to discount the tax shields and residual values. Readers must form their own opinions on the question of which of the rates is the better surrogate for the rate which best reflects the risk characteristics of such flows. It is hoped that the analysis of this paper will help their judgement.

It seems unreasonable to use the Fawthrop and Terry (F & T) findings to challenge the line of analysis adopted by all of the participants in the B & M derived debate in this journal. Firstly, one must ask whether the Debt/Equity ratio is perceived by most managers solely as a Balance Sheet ratio, for if it is, leasing is excluded by definition. Question 5 of the F & T study actually defines the Debt/Equity ratio as being derived from the Balance Sheet – so it is hardly surprising if respondents did not include leasing in it. Secondly, one needs to ask whether gearing constraints are set exclusively by the Debt/Equity ratio. The answers to the F & T question 5 indicate that they are not. Prior charges cover in the Profit and Loss Account and prior charges cover in a cash flow analysis of some kind attracted strong support as being very relevant. F & T state, 'In discussion, most readily accepted that the prior charges cover derived from the P & L Account, was

really a surrogate for a true cash-flow prior charges cover'. If that is so there were more respondents considering that cash flow cover was 'very relevant' than there were claiming that status for the Debt/Equity ratio. This appears to support the Grinyer model which was derived from arguments based on the relevance of cash flows as the basis for gearing. A further extract from F & T reads, 'On balance the research indicated a slow turning towards the use of cash flow projections'. If gearing constraints are set by reference to cash flows, then the gearing capacity taken up by leasing should be similarly calculated.

Conclusions

The reader will have concluded from this debate that the major issues are

1. Whether or not leasing is correctly evaluated as an alternative to debt finance which, in turn, depends on whether it gears the firm so that borrowing capacity is reduced. The participants in the discussion in *Accounting and Business Research* appear to believe that it should be evaluated as such an alternative.
2. Whether or not gearing capacity is best estimated by reference to contractual terms or to cash flows. B & M and Bowles base their models on contractual terms. Middleton, Grinyer and Burrows support the use of cash flows.
3. The choice of discount rates for discounting the assumed flows. Here there appear to be substantial differences. Middleton, Grinyer and Burrows all favour the use of the after tax cost of debt, but Burrows proposes to discount certain of the cash flows at the weighted average cost of capital. B & M and Bowles each have their own formulations, involving a number of rates.

As with so many controversial matters, the final choice of solution depends on the judgement of the decision maker. Most of the differences in approach stem from different perceptions of the capital market's behaviour, and a consensus would be inconsistent with these individual perceptions. The reader must decide which perception best accords with his beliefs and act accordingly. I have already expressed my opinions!

¹³This statement follows from acceptance of the concept outlined above, that flows of identical risk are worth identical present sums.

Value Added as a Focus of Attention for Financial Reporting: Some Conceptual Problems

B. A. Rutherford

*The Corporate Report*¹ recommends that companies and similar entities should include in their annual reports a statement of value added (SVA). The statement would show 'how the benefits of the efforts of an enterprise are shared between employees, providers of capital, the state and reinvestment'.² The statement would also 'assist users to evaluate the economic performance of the entity'.³ Although *The Corporate Report* modestly claims that 'the concept is neither new nor original',⁴ the idea of reporting value added by individual companies in a separate statement is certainly novel.⁵ The purpose of this article is (a) to suggest the need for, and develop, a rationale for value added as a focus of attention for financial reporting and (b) to describe some basic conceptual problems which arise from the use of value added in financial reporting.

A rationale for value added

The illustrative example of a SVA given by *The Corporate Report* is shown in figure 1. Although it contains a good deal of data, it adds little to the information content of an annual report. The only

information contained in the SVA which is not disclosed elsewhere is (a) total payroll costs and (b) total input costs. In the case of a company operating exclusively in the UK, the former will be very closely related to total UK employee remuneration, which is required to be disclosed by Section 18 of the Companies Act 1967, and hence the latter may be obtained by elimination.

The SVA, then, offers a fresh perspective rather than new scenery. Why is a fresh perspective necessary? To quote from *The Corporate Report*:

There is evidence that the meaning and significance of profits are widely misunderstood. . . . We accept the proposition that profits are an essential part of any market economy, and that in consequence their positive and creative function should be clearly recognised and presented.⁶

The need for the SVA arises because it is 'the simplest and most immediate way of putting profit into perspective. . . .'⁷ However, if the SVA is to be seen as something more than a crude attempt to divert attention from profits, it is important that the new focus of attention should have some underlying rationale.

Use of the concept of value added has, until now, been largely restricted to the field of economics, where it is employed as one of several theoretical approaches to the measurement of national income.⁸

¹Accounting Standards Steering Committee, *The Corporate Report*, London, 1975.

²*Ibid.*, p. 48.

³*Ibid.*

⁴*Ibid.*, p. 50.

⁵A report which is similar in many ways to the SVA is used within the Yugoslav system of workers' management. The accounting number which *The Corporate Report* labels value added is normally described (in translation) as net product. See Connock, M., 'Workers' management in Yugoslavia', *Accountancy*, December 1974, pp. 42-44, and Vanek, J., *The Economics of Workers' Management* (London: Allen and Unwin, 1972).

⁶ *The Corporate Report*, p. 49.

⁷*Ibid.*

⁸The concept is also used in the field of taxation, and the term 'value added' has been employed in some management accounting literature with a rather different meaning, akin to contribution costing with labour costs treated as a fixed expense. See, for example, Gilchrist, R. R., *Managing for Profit: the Added Value Concept* (London: Allen and Unwin, 1971.)

FIGURE 1

A Manufacturing Company

STATEMENT OF VALUE ADDED

	Year to 31st December 1974	Preceding Year
	£m	£m
Turnover	103.9	102.3
Bought-in materials and services	67.6	72.1
Value added	<u>£36.3</u>	<u>£30.2</u>
Applied the following way		
<i>To pay employees</i>		
Wages, pensions and fringe benefits	25.9	17.3
<i>To pay providers of capital</i>		
Interest on loans	0.8	0.6
Dividends to shareholders	<u>0.9</u>	<u>0.9</u>
	1.7	1.5
<i>To pay government</i>		
Corporation tax payable	3.9	3.1
<i>To provide for maintenance and expansion of assets</i>		
Depreciation	2.0	1.8
Retained profits	<u>2.8</u>	<u>6.5</u>
	4.8	8.3
Value added	<u>£36.3</u>	<u>£30.2</u>

Source: Accounting Standards Steering Committee, *The Corporate Report*, London, 1975, p. 50.

Ruggles and Ruggles describe the rationale for the economists' model of value added as follows:

The value added by a firm, i.e. the value created by the activities of the firm and its employees alone, can be measured by the difference between the market value of the goods that have been turned out by the firm and the cost of those goods and materials purchased from other producers. This measure will exclude the contributions made by other producers to the total value of this firm's production, so that it is essentially equal to the market value created by this firm. The value added measure assesses the net contribution made by each firm to the total value of production; by adding up all of these contributions, therefore, it is possible to arrive at a total for the whole economy that will represent the market value of production.⁹ It is suggested that this rationale should also be employed in financial accounting: an individual

firm's value added is an important reporting measure because it represents that firm's *contribution to the wealth generated within the economy* during any particular period. This is what the authors of *The Corporate Report* appear to have in mind, although nowhere is it explicitly stated. A vital implication of this rationale must be emphasised at this point: if the significance of an individual firm's value added derives from the aggregate value added within the economy, then the reporting model must be additive, i.e., conceptually at least, individual measures of value added should be able to be summed to equal aggregate value added.

The model contained in *The Corporate Report* goes further than calculating value added; it also seeks to perform an allocation between the various economic flows to which value added gives rise, and makes an attempt to attach those flows to recipients. The additivity requirement and the allocation of value added can perhaps best be illustrated by way of an example. Suppose a village baker bakes and sells during the year bread with a total sales value of £40,000. Suppose further that (a) his expenses

⁹Ruggles, R. and Ruggles, N. D., *National Income Accounts and Income Analysis* (New York: McGraw-Hill, 2nd ed., 1965), p. 50.

consist of flour purchased for £15,000 and wages of £5,000, (b) he draws £5,000 from the business for his own consumption and reinvests the remaining surplus, (c) the farmer who supplies the flour does no other trade, has no expenses, consumes £5,000 and invests the remaining surplus, (d) there are no stocks at the beginning or end of the period, and (e) there is no taxation. The value added by the activities of the baker and farmer is:

	<i>Baker</i>	<i>Farmer</i>	<i>Total</i>
	£	£	£
Sales	40,000	15,000	55,000
Less: Input costs	15,000	—	15,000
Value added	25,000	15,000	40,000
Wages	5,000	—	5,000
Consumption by the self-employed	5,000	5,000	10,000
Reinvestment	15,000	10,000	25,000
	25,000	15,000	40,000

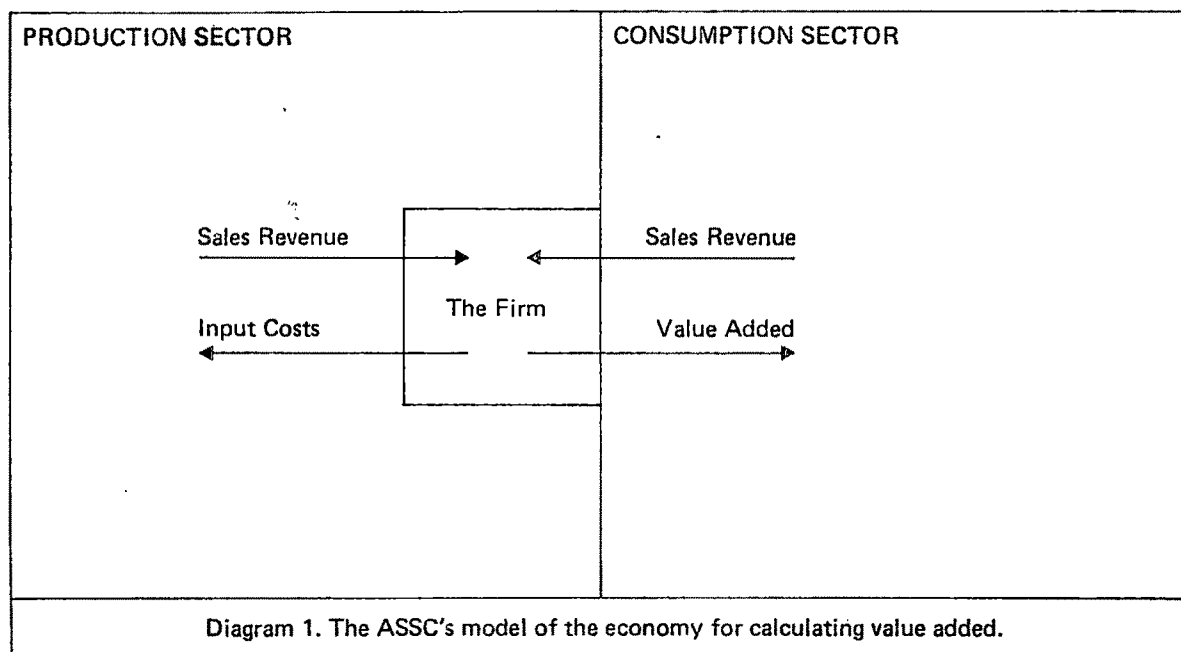
Conceptual problems in calculating value added

The rationale offered in the previous section provides a justification for focusing attention on value added; it does not provide a detailed prescription for its calculation. The processes by which value is generated within an advanced economy are complex, diffuse

and interactive: any attempt to allocate aggregate value added between individual enterprises raises several conceptual problems, particularly if the additive quality of the model is to be preserved. The economist's model of value added provides little assistance in dealing with these problems, perhaps because of the purpose for which it was developed: it is designed primarily to yield aggregate data by summation, hence an individual entity's value added need not be precisely demarcated; all that is necessary is a 'consolidation adjustment' to avoid double-counting.

Sectoral recognition of value added

The model of the economy on which the notion of value added described in *The Corporate Report* is based is a highly simplistic one. It is presented in Diagram 1. A firm's only source of income is its sales revenue, which can be derived from either the production or the consumption sector. From this revenue the firm pays other members of the production sector for its inputs; the balance is value added which is distributed to the consumption sector by a variety of routes including wages and dividends. The presence in the economy of flows and sectors which do not fit easily into this model gives rise to difficulties in deciding on the point in the chain of production at which value should be recognised. Consider, for example, the case of a financial institution standing between the consumption and production sectors. Interest paid by a manufacturing company to such an institution could be regarded as either an input cost to the manufacturing company, or as part of its



value added. Ruggles and Ruggles¹⁰ treat interest as a component of value added, whereas Brooman writes, 'Banks and other financial institutions, though not handling physical commodities, provide subsidiary services. . . .'¹¹ This would imply that financial institutions are located within the production sector, in which case their distributions are allocations of value added, and manufacturing companies must treat interest paid as an input cost: to do otherwise would lead to double counting. Similar problems arise with rent, insurance payments, bad debts and royalties.

Alternative approaches to the recognition of value added include:

(a) Recognition as soon as factor incomes are paid, i.e. treating interest paid, rent expense etc. as components of value added by manufacturing companies regardless of the nature of the recipient. Under a 'factor income model' banks, finance companies, rentiers and similar institutions are regarded as having a redistributive, rather than a productive rôle in the economy, since interest, rent, dividends and similar distributions received from other entities in the production sector cannot be regarded as giving rise to value added. It seems likely that such a view of their activities may not appeal to them. Such a view would, however, offer a new measure of relative efficiency of those institutions: the amount of value which they absorbed in the process of redistribution.

(b) Recognition only when the corresponding payment is received by a member of the consumption sector, i.e. interest paid to a finance company is treated as an input cost, whereas interest paid to individuals is treated as an allocation of value added. A 'sectoral model' would include financial institutions in the production sector, but would involve treating otherwise identical flows differently according to the nature of the recipient.¹²

Any particular entity may combine the functions of a manufacturing company and a financial institution, making the problem of allocating value added by the manufacturing activity under a factor income model doubly difficult. Consider a company with sales of £100, input costs of £20 and interest income of £10, which pays out £50 in wages and £40 in dividends. Under a sectoral income model interest

income would be treated as giving rise to value added:

	£
Sales (including interest income)	110
Input costs	20
	—
Value added	90
	—
Wages	50
Dividend	40
	—
	90
	—

Under a factor income model interest income must be excluded from value added, reducing it to £80, but is this to be treated as a restriction of wages or dividends? Perhaps the only way round this is to allow 'value distributed' to differ from value added:

	£
Sales	100
Input costs	20
	—
Value added	80
Value received from other parts of the production sector	10
	—
Value distributed	90
	—

Temporal recognition of value added

Economists frequently present aggregate economic data as cash flows; accounting models employ accruals and are thus appropriate for reporting value. The problem arises, however, as to the stage in the process of production and distribution at which value added is to be recognised. SVAs based on the unadjusted inventories included in conventional accounts are hybrids. Production wages are charged in the accounts at the time of production and any labour element in the cost of closing stock is included in the stock valuation: hence the wage allocation recognises value added at the point of production; the profit element in closing stock is not of course included in the stock valuation and hence will not be recognised in the SVA. Under this hybrid form, the input cost described in *The Corporate Report* as 'bought-in materials and services' in fact combines the cost of bought-in materials and services *used in production* with any change in the labour cost element of stock valuation during the period. Thus the hybrid SVA uses an input cost number which represents little more than a balancing figure, and recognises the wage and profit allocations of value added on different bases: yet it seems to be this form which

¹⁰*Ibid.*, p. 51.

¹¹Brooman, F. S., *Macroeconomics* (London: Allen and Unwin, 4th ed., 1970), p. 22.

¹²This would require a new classification scheme for prime entries (specifying the nature of the recipient), for which the company may not be able under present law to obtain the necessary information (eg dividend payments to nominee holdings).

The Corporate Report envisages.¹³ Cox points out that, 'A statement on these lines . . . should certainly not be referred to as added value. Companies should describe it as what it is, namely: "A statement of Earnings and their Distribution"'.¹⁴

To be consistent, value added should be recognised either at the point of production or on sale. Recognition at the time of sale would accord with the fiscal notion of value added, but has little else to commend it. Systematic application would require that other period flows giving rise to value added, for example, interest, should also be apportioned between sales and closing inventory. The timing of the recognition of value incorporated in a particular good would depend on the route by which that good reached the consumer: intermediate sale to a third-party would cause some part of the value to be recognised earlier if it was still held in stock by the manufacturer.

In view of the economic rationale for value added, it would seem preferable to recognise it at the point of production. This would, however, involve establishing a market value for closing stock.

In treating depreciation as an allocation of value added, *The Corporate Report* reverts to a cash flow basis of accounting, although not with consistency since it would appear that capital expenditure is not to be regarded as an input cost. Fixed assets are provided out of value added: they represent wealth which could otherwise have been used for consumption; by the same token, the acquisition of fixed assets must be *financed* from injections of capital from the consumption sector (including compulsory injections of retained profits), which absorb value added. Thus it would constitute double-counting to include the erosion of those assets (depreciation) as value added. To put it another way, the creation of value added implies an increase in the amount of wealth available to the economy to consume or reinvest. Any erosion in the opening stock of wealth must be made good from value generated within the period before the balance of value *added* can be struck. Brooman writes:

But plant and machinery, though not wholly used up, will be partly worn out in production, and its wear-and-tear should therefore be treated as an input on exactly the same footing as the input of materials and deducted accordingly from the value of output.¹⁵

The treatment of depreciation as an input cost accords with the view of depreciation taken in

conventional profit calculations, and with the treatment in Yugoslav reports.¹⁶

Valuation

Whilst historical cost accounting persists, the costs and revenues included in financial accounts clearly will not represent magnitudes having economic significance. The situation will be much improved when current value accounting is introduced; however the 'market transaction-market value' convention does not always capture real economic events. As an example, consider a housewife who regularly does her family's washing. This will not be regarded as creating national income (and consequently value added) since it does not give rise to a market transaction. Suppose that the washing is now sent to a commercial laundry, which employs the housewife part-time to do her own washing. By the market transaction-market value convention, national income will increase by the amount of her bill, yet in real terms consumption by society has not altered. Usher¹⁷ offers further examples. In general, social costs and benefits should be incorporated into a calculation of the effect on national wealth of a company's activities.

Attachment of flows

The SVA goes further than the calculation and allocation of value added; it also 'attaches' the allocations to particular classes of recipient. Difficulties arise in the case of retained profits.¹⁸ The model upon which the SVA is based treats value added as created by the production sector and allocated amongst the consumption sector. Since the company itself is in the production sector, can it 'receive' some of its own value added? The law and classical business finance regard retained profits as 'belonging' to shareholders, whereas *The Corporate Report* does not attach them to 'providers of capital' but, by implication, to the company itself, to be used 'to provide for maintenance and expansion of assets'.

Value added and the public sector

Most of the problems discussed in the previous section are compounded by the existence of a public sector which interacts with both the production and the consumption sectors. It is well established that the economic burden of a tax (defined in terms of distortion in patterns of consumption) does not

¹³Cox, B., 'Added Value and "The Corporate Report"', *Management Accounting*, April 1976, pp. 145-6.

¹⁴*Ibid.*, p. 146.

¹⁵Brooman, *op. cit.*, p. 23.

¹⁶Connock, *op. cit.*, p. 42.

¹⁷Usher, D., *Rich and Poor Countries: A Study in Problems of Comparisons of Real Income* (London: Institute of Economic Affairs, 1966).

¹⁸And possibly in the case of taxation.

necessarily fall on those who are responsible for paying it over to the government. Thus, for example, although the impact of corporation tax clearly falls on the company, it may be possible for the company to shift the burden forwards on to customers by means of higher prices or backwards on to employees or suppliers by means of reduced prices paid for factors or inputs.¹⁹ By the same token, the company may in fact bear part of the burden of taxes which were not designed to fall on it: thus it may indirectly bear part of the burden of VAT if it is obliged by competitive forces to limit its gross price increase after the imposition of the tax so as to recover less than the full amount of the tax.

The extent to which taxes are shifted between sectors would be reflected in a SVA drawn up to incorporate economic values. Thus if the burden of corporation tax is shifted to consumers it might be deducted from turnover (on the same footing as VAT, since the company has merely acted as agent for the collection of the tax), and if it is shifted to employees it might be added to the labour cost allocation of value added, since it is the employees of the company who are making the sacrifice of consumption to enable the government to provide additional services.

A further difficulty is that part of the expenditure which governments make from tax revenue represents the provision of inputs to the production sector free of charge, or at below market prices. Examples of such expenditure include free provision of private goods (e.g. education), provision of private goods at below market prices (e.g. coal, steel) which results in losses to the public sector which must be subsidised from public funds, and the (necessarily) free provision of public goods by which the production sector benefits (e.g. law and order, enforcement of property

rights etc.). Any tax borne by the company which is used by the government to provide inputs to the company should, in principle, be treated as an input cost rather than as an allocation of value added. On the other hand, taxes which are borne by companies, for example stamp duty, rates, etc., and for which revenue does not reflect a corresponding benefit, constitute an allocation of value added.

To incorporate the adjustments described in this section would require departure from the market transaction-market value convention, allocation of government revenue to expenditure, and arbitrary valuations of the benefits derived from public goods.²⁰ Under these circumstances it may well be preferable to treat taxation 'conventionally' but to avoid any attempt to attach it to recipients.

Conclusion

If value added is to be accepted as a useful focus of attention for financial reporting, it must be derived from a consistent model, systematically applied. *The Corporate Report* accepted that 'the presentation of value added statements involves overcoming many of the problems also associated with the presentation of profit and loss accounts, for example the treatment of extraordinary profits and losses'.²¹ This paper has demonstrated that there are deep-rooted conceptual problems in reporting value added as well as problems associated with the treatment of individual items in the accounts. In particular, the point and timing of recognition of value added must be specified. The ASC should devote urgent attention to resolving these issues if the SVA is to retain credibility as more than a cosmetic rearrangement of the profit and loss account.

¹⁹For an early theoretical exposition of shifting and incidence, see Edgeworth, F. Y., *Papers Relating to Political Economy* (London: Macmillan, 1925); for some empirical evidence that shifting does occur to a marked extent in the case of corporate taxation, see Krzyzaniak, M. and Musgrave, R. A., *The Shifting of the Corporation Income Tax* (Baltimore: Johns Hopkins Press, 1963).

²⁰For a description of the difference between public (collective consumption) and private goods, and an explanation of why the valuation of the benefit from public goods must be arbitrary, see Samuelson, P. A., 'The Pure Theory of Public Expenditure', *Review of Economics and Statistics*, 1954, pp. 387-9, reprinted in Houghton, R. W. (ed.), *Public Finance* (Harmondsworth: Penguin, 1970).

²¹*The Corporate Report*, p. 50.

The Search for Scouller: an Interim Report

L. Goldberg

The beginning

Who was John Scouller? What sort of man was he? What was his career? These were questions that teased me when my acquaintance with him began over twenty years ago; there is still much that I want to know about him. I am putting this account in the form of a personal record because that is how it happened.

The search began when I acquired, at a second-hand book shop in Melbourne, a small book entitled *Practical Book-keeping* by John Scouller, who was described on the title page as 'Public Accountant of Sydney, N.S.W.' It was a sixth edition, published in Melbourne in 1904 by George Robertson & Co., Propy., Ltd. and had the sub-title of 'A Manual of Book-keeping and Accounts for the Use of Merchants, Tradesmen, Book-keepers, etc.'

What is so remarkable about a book on book-keeping published in 1904? Only this: that a perusal of the book suggested that it had first been written about twenty-five years before that and, if this were so, and if it had been published in Melbourne then it was, perhaps, the first book on book-keeping to have been written and published in Australia. At least I knew of none earlier than that and, if it was not the first, it must have been one of the earliest.

I should recount the internal evidence that led to this supposition. In the first place, the dates shown for the transactions entered in the several books of account were all between January 1 and June 30, 1880. This in itself suggested that the book had been written about 1880 and that there had been little, if any, change between the original edition and the sixth edition of 1904. Secondly, there is a 'Preface to the First Edition' but nothing further by way of preface. Thirdly, an introductory chapter, devoted largely to errors and defalcations, contains a number of pertinent references:

(a) 'Of this we have recently had an example . . . in the case of the City of Glasgow Bank, which suddenly collapsed in the midst of apparent prosperity . . .'¹

This collapse occurred in October 1878.

(b) 'We have, likewise, had in our own city . . . the case of the Provincial and Suburban Bank.'²

Reference to the *Australasian Insurance and Banking Record* revealed that this was a case of fraud which occurred in Melbourne in 1879.³

(c) The book also contained a reference to a job the author had done 'some few years ago' in which 'the writer was employed, for a firm of London accountants, to effect the desired change [from single entry to double entry] for a firm in Yorkshire and to balance their books for the year ending 31st March, 1873.'⁴

Presumably Scouller had been in England in 1873 and perhaps later.

At that time I had also located a review of the book in *The Accountant* of 1904 which stated, *inter alia*, (a) that the publishers were Simpkin, Marshall & Co. Ltd., London, (b) that the book 'has been before the mercantile public in Australasia for the past 25 years' and (c) that 'it possesses considerable interest as indicating a somewhat advanced standard of knowledge to be possessed by a public accountant in Sydney in 1879.'⁵

Another matter arising from perusal of the book was that, although the title page suggested that the author was located in Sydney, many of the illustrative transactions referred to places in Victoria. Goods were sold to hypothetical customers in Melbourne, Ballarat, Geelong, Echuca, Castlemaine, Maryborough and Sandhurst (the older name for Bendigo), and there were none interstate. Suppliers were located in Britain and Melbourne, Ballarat and Geelong. Cash resources were held at the Bank of Victoria. This suggested that the book was written in Victoria rather than New South Wales and was directed to a Victorian audience or clientele and, further, that at some time between 1880 and 1904 the author must

²Idem.

³*Australasian Insurance and Banking Record* 1879, pp. 307, 339.

⁴Scouller, *op. cit.* p. 3.

⁵*Accountant*, December 10, 1904, p. 730.

¹Scouller, p. 9.

have moved from Melbourne to Sydney. However, it seems pertinent to note here that the book included an appendix which showed a Revenue Account and Balance Sheet for a colliery whose location is not given but which had the Bank of New South Wales as its bankers and had at least some operations in Sydney.

The catalogue of the Public Library of Victoria included a card for a third edition, Melbourne, 1885, but when a request was made the book was missing. (Twenty years later it is still missing.) However, this did indicate that the first three editions were published, probably all in Melbourne, in the course of five or six years.

Early steps – London

In the next year, 1955, I spent some of my first sabbatical in London and I naturally and inevitably gravitated to the library of the Institute of Chartered Accountants in England and Wales where, among the several matters then engaging my attention, I made some enquiries about the Scouller book. The Institute had a copy of the sixth edition only which showed the publishers as Simpkin, Marshall, Hamilton, Kent & Co. It also had another book by him, *The Practical Book-keeper and Accountant's Guide* published by the same firm in 1905. The British Museum also had no record of any earlier editions than the sixth of 1904, and as a copy of every book published in the United Kingdom is required to be sent to it, I inferred that the first five editions must have been published in Australia only.

I phoned Simpkin, Marshall Ltd. in the hope that their records might have some relevant information. I was told that their premises had been bombed out in 1940 during the Battle of Britain and that almost all their records to that date had been destroyed. However, they did have some old catalogues and subsequently I was told by my informant, who had examined these back to 1870, that she had found nothing except a reference to the 1904 edition, with the remark 'Books eventually returned to author', some time after 1904. She surmised that the book may have been privately published by the author until the sixth edition which was undertaken by their firm, but I thought my explanation was more likely, namely, that it had been successful over several editions in Australia and had been subsequently published in England after this colonial success. The return of books to the author may have been a result of the publication of the 1905 *Practical Book-keeper and Accountant's Guide*, which incorporated much of the material of the earlier work.

While looking through some of the earliest copies of *The Accountant*, I noticed in the November 1874

issue an announcement of the forthcoming publication of an Accountants' Diary and Directory for 1875, 'applications for which and correct names and addresses for inclusion in the Directory are requested to be sent without delay . . .'⁶ If Scouller were listed in this Directory it would prove that he was in the United Kingdom at that time; if he were not, it would not prove anything, but in this type of inquiry one has to follow all leads.

The December issue repeated the announcement but stated that 'the issue of this publication is unavoidably postponed for a few days . . .'⁷ but the issue of January 2nd, 1875 (and subsequent issues) contained the announcement that 'This publication is NOW READY and contains, besides useful information and an ample Diary, a Directory of all the Accountants in England and Scotland.'⁸

The Chartered Institute Library did not possess a copy of this directory; in fact, the librarian thought it unlikely that any had survived. But after a search in the British Museum – which is a story in itself – I did locate one and examined it eagerly. It had been compiled by Alfred C. Harper, ASAE, Public Accountant and Auditor, Secretary of the Society of Accountants in England, and contained lists of accountants in London, in England, in Scotland (under towns) and in England by chief towns and counties (for small towns). There was no sign of Scouller, J. in any of these lists.

Because of other commitments, I could spare no more time or effort in pursuing the search in the United Kingdom, and there the matter rested and my file on Scouller stayed almost undisturbed in my cabinet for many years. Other files demanded my attention.

Resumption

I had not forgotten him, however, and from time to time some little thing occurred to keep my thoughts about him alive. For example, in 1968 I was browsing among some books in a junk shop and picked up a copy of his 1905 *Practical Book-keeper and Accountant's Guide*. And a few years after that a fellow researcher, to whom I had mentioned Scouller, was good enough to let me know of the appearance of Scouller's name in some Sydney directories for 1889–1890.

So, when I was approached in 1975 to prepare a paper on some aspect of accounting history, I

⁶p. 22. *The Accountant* commenced publication as a monthly in 1874.

⁷*Accountant*, December 1874, p. 20.

⁸*Ibid.*, January 2, 1875, p. 1.

reviewed the evidence in my long-neglected file and tested the possibility of furthering my search.

At this stage the questions I wanted answers to were numerous, but the primary ones were: Who was John Scouller? Was he, in fact, in Melbourne in or about 1880? Did he practise as an accountant in Melbourne? Did he migrate from Britain and, if so, when? When and where was his book first published? What differences were there between the first and sixth editions of his book? Did he go to Sydney and, if so, when, and what did he do there? When and where was he born and when and where did he die?

The Library of the Australian Society of Accountants in Melbourne has some archival material relating to the formation of the Society's predecessor bodies, and while looking through this I found the Preliminary Minute Book of The Institute of Accountants in Victoria. This contained a letter from Charles A. Cooper to William Crellin, dated 13th January 1886, to which was attached a list of the names of gentlemen present at a meeting 'held at the Duke of Rothsay Hotel, Elizabeth Street, Melbourne on . . . December 3rd, 1885 . . . to consider the advisability of establishing a Branch of The Society of Accountants, London, in Victoria.'⁹ This list of people attending the meeting included the name 'Mr. Scouller' with 'J' written in pencil, and also in pencil underneath was 'Robert Jolly & Co., 18½ Little Collins Street'. But there was no further mention of him in subsequent proceedings to form this professional body and he certainly did not become a member of the resulting Incorporated Institute of Accountants.¹⁰ The qualification required for foundation membership was two years' practice as a public accountant in Victoria prior to 1st January, 1886. Why did Scouller not become a member, and what was his relationship with Robert Jolly & Co.?

A trail of two cities

The search for answers led next to an examination of Sands and McDougall's Melbourne and Suburban Directories, an excursion not without its pitfalls. Scouller's first appearance in these interesting repositories of data was in the 1877 Directory. In the 'Alphabetical' section the entry was: Scouller,

John, accountant, p.r. George Hotel, St. Kilda,¹¹ and, under the somewhat verbose Trade and Professional category of 'Accountants, Actuaries, Arbitrators, Average Staters, Auditors, Valuers, etc.', Scouller, John, George Hotel, St. K.¹² As his name did not appear in the 1876 Directory, it seemed a reasonable possibility that he might have arrived in Melbourne during that year.

In the Directories for each year from 1878 to 1882 inclusive, he was listed in both the Alphabetical and Trades and Professional sections as 'accountant', with the address 35 Queen Street.¹³ The 1883 Directory includes in the Alphabetical section: SCOLLER¹⁴ & CO., accountants, &c., 35 Queen St, and in the altered Trade and Professional category of 'Accountants, Valuers, &c.': Scouller, J. & Co., 35 Queen St.¹⁴

The 1884 Directory has evidence of an interesting development. The entries are:

Alphabetical -

SCOULLER and JOLLEY (Scouller, J.) accountants and trade assignees, 43 Elizabeth St; p.r. 2 Gisborne St, E.M.

and

JOLLEY, ROBERT and Co. (Jolley, R.) importers and fancy goods warehousemen, 43 Elizabeth St, p.r. Greville St, Pra.

Trade and Professional, under 'Accountants, Valuers, &c' -

Scouller and Jolly, 43 Elizabeth st.¹⁵

In the 1885 Directory there is no entry for Scouller as an accountant, but he appears in the Alphabetical section:

Scoullar,¹⁶ John (Jolley, Robert & Co.), Neptune-street, St. K. and

JOLLEY, ROBERT, and CO. (Jolley, R., Scouller, John) importers, and fancy goods warehousemen, Carson's-place, 18A Lit. Collins-st. east (see advt.).¹⁷

The advertisement appeared on p. 118 of an advertisement section and stated that the firm were not only importers, wholesale stationers, paper

¹¹p. 578.

¹²p. 616.

¹³Sands and McDougall, 1878, pp. 588, 674; 1879, pp. 609, 679 (there is a misprint in this year, the address being shown as 33 instead of 35); 1880, pp. 639, 734; 1881, pp. 664, 764; 1882, pp. 725, 839.

¹⁴Another obvious misprint. Sands and McDougall, 1883, pp. 760, 878.

¹⁵Sands and McDougall, 1884, pp. 591, 792, 909. E. M. is East Melbourne, Pra. is Prahran. Note misprint of Jolley's name.

¹⁶Obviously another misprint.

¹⁷Sands and MacDougall, 1885, pp. 840, 633.

⁹Subsequently a separate body, The Institute of Accountants in Victoria, and not a branch of the London Society, was formed. This decision apparently resulted in some friction between Mr. Cooper and Mr. Crellin.

¹⁰The Incorporated Institute of Accountants, Victoria (Founded April 12 1886, Incorporated March 1 1887). List of members, Memorandum and Articles of Association, 1887; Preliminary Minute Book, pp. 6-7.

merchants and fancy goods warehousemen, but also sole agents for Australia and New Zealand for L. Prang & Son, Boston, USA and 'largest importers of Christmas, New Year, Valentine, Wedding, Birthday and Congratulation Cards. Also Fancy Goods, Suitable Xmas Presents, and Birthday Gifts.' Perhaps even more interesting is the fact that the advertisement shows a Sydney address, viz., 25 Clarence Street, as well as the Melbourne one of 18a Little Collins Street.

The same Alphabetical and Trade entries for Robert Jolley & Co. appeared in the 1886 Directory, but, although the latter states 'see advt.', the firm was not listed in the Index of Advertisements and I was not able to find an advertisement for it anywhere in the Directory for that year.¹⁸

Except for the indication that John Scouller was a member of Jolley & Co., there was no entry for him either alphabetically or under trades and professional. However, in this and the following year there did appear 'Scouler, John, Loch Street, St. K.' but it is doubtful whether this was a mere misprint. In the first place, such spelling involves two errors, viz., 'l' for 'll' and 'a' for 'e'; and secondly in 1887 John Scouller's name was dropped from the reference to membership of the firm Robert Jolley and Co. whereas it had been included in 1885 and 1886.

It is of passing interest to note that in the 1887 Directory the Trade and Professional classification of Accountants had three categories: 'Institute of', 'Professional' and 'Trade and Valuers'. If our hero were in Melbourne and practising as an accountant, surely he would have been listed under one of these categories.

It is submitted that the reason he disappeared from the Melbourne directories after 1886 is that he went to Sydney about that time, perhaps near the end of 1885. This would also account for his non-membership of the new-born Institute of Accountants in Victoria.

The name of Robert Jolley and Co. continued to appear in the Directories for many years; indeed, until 1917. In the earlier of these entries there was shown a Sydney address which changed from Clarence Street to 348 George Street and then to 81 York Street.

The counterpart to Sands and McDougall's Melbourne and Suburban Directory is Sands's Sydney and Suburban Directory, which was the next point of attack. In the 1885 Directory the entry 'JOLLEY, ROBERT AND CO., importers and fancy goods warehousemen, 225 Clarence st' appears in the Alphabetical section and 'JOLLEY, R. AND

CO.' under Stationers - Wholesale.¹⁹

In the following year, 1886, in addition to the same entry for Jolley and Co., there appears

Scouller and Jolley, accountants and trade assignees, 225 Clarence-st.

in the Alphabetical section, but there is no separate entry for John Scouller. In the Trade classification, 'Scouller and Jolly' (an obvious misprint of 'Jolley') appears under Accountants and 'Jolley, R. and Co.' under Stationers - Wholesale.²⁰

Unfortunately, the 1887 Directory was not available but that for 1888 revealed interesting developments. Robert Jolley and Co. were still listed as 'agents and importers, fancy goods warehousemen, and fine art publishers, 81a York St.' But now we also find in the Alphabetical section:

SCOULLER AND ROBERTSON (John Scouller, James Robertson), accountants, trade assignees, auditors and arbitrators, Wynyard Chambers, Wynyard st. - (See advt. opposite 'Accountants') with an entry for them in the Trade section. The advertisement is there; in fact, they were the only accountants to advertise, taking a whole page, admittedly with a fair amount of blank space above and below the wording, which set out in quite clear terms the scope of their activities. Not only were they Accountants, Trade Assignees, Auditors and Arbitrators, but Mercantile, Estate, Finance and General Agents and Brokers, while a further service was offered - 'The administration of Trust and other Estates undertaken for Trustees or as Trustees'.

But this directory has two other intriguing entries. In the Alphabetical section there appears:

Scouller, J. and R., stationers and fancy depot 231 William st.

and in the 'Streets' section, in Wynyard Chambers: Scouller and Wood, accountants and trade assignees.²¹

The 1889 Directory has entries for J. and R. Scouller, Scouller and Robertson, and Robert Jolley and Co. Scouller and Robertson are listed under both 'Accountants' and 'Auditors' in the Trade section and their advertisement appears again, this time in half a page, with the same wording and layout as in the previous year. J. and R. Scouller appear under the Trade heading of Stationers, with addresses at 3 Sydney arcade, 408 George st. and 231 William st. Jolley and Co. are listed under importers. This Directory also reveals that Scouller and Robertson were using one of those new-fangled

¹⁹Sands, 1885, pp. 513, 798.

²⁰Sands, 1886, pp. 737, 594, 827, 851.

²¹Sands, 1888, pp. 123, 615, 755, 840, 841.

¹⁸Sands and MacDougall, 1886, pp. 649, 1049.

contraptions, the telephone, their number being 666.²²

In 1890 we find 'SCOULLER J. AND CO.' at Wynyard Chambers as accountants *et al*, and, as previously, J. and R. Scouller as stationers, and Robert Jolley and Co., continuing as agents.²³ In 1891 we find SCOULLER J. AND CO. listed alphabetically and under both 'Accountants' and 'Auditors', but with the address changed to 49 York st. The telephone number, 666, however, is listed in the name of 'Scouller, Ball and Co., accountants and trade assignees, 94 York st. opposite Wynyard st.' (probably a transposition of figures). J. and R. Scouller, stationers are at 3 Sydney arcade only, and Robert Jolley and Co. are at 69A York st. We also find James Robertson and Co., 173 Pitt st. listed under 'Accountants' and 'Auditors'.²⁴ Presumably the brief confluence of interests of John Scouller and James Robertson had ceased and their respective streams of activity no longer flowed in the same channel.

In 1892 there is no entry for Jolley and Co., and the only Scouller entries are:

Scouller J. and R., fancy repository, 1 Imperial arcade, Pitt st. and 3 Sydney arcade, George st. in the Alphabetical section, and listings under 'Fancy Goods Repositories' with the address of 2 Imperial arcade, Pitt st. and 'Stationers' with the Sydney arcade address. There is no sign of Scouller in the telephone list but the number 666 is given for Ball and Dunckley, accountants & trade assignees, 96 Pitt st.²⁵

In 1893 J. and R. Scouller are listed in the Alphabetical and Trades sections as stationers at 3 Sydney arcade only, Ball and Dunckley are at 420 George st., and Jolley and Co. have disappeared.²⁶ In 1894 J. and R. Scouller are listed alphabetically as before, but not under stationers in the Trades section. However, the entry 'Scouller, John, Church st., Ashfield' is listed in the Alphabetical section, and, in the 'geographical' section, under Ashfield and Summer Hill, appears 'Scoullar, John "Mount Charles"'. (In the previous year 'Mount Charles' apparently was occupied by somebody named E. A. Antrobus.)²⁷ Is this latter entry another misprint or has another person with the same or a

very similar name come on the scene? At present I have no means at my disposal of providing the answer.

In 1895, we find, in the Alphabetical section, Scouller, J. stationer, 11 Sydney arcade, 406 George st., and

Scouller, John, Church st., Ashfield.

The name is also listed under 'Stationers' in the Trade and Professional section.²⁸ What has happened to R. Scouller?

In 1896 John Scouller disappears. No Scouller is listed alphabetically or under stationers or accountants or auditors. W. T. Ball and Co. also disappear. 'Mount Charles' is occupied by one Frederick Hagen. There is, however, a John Scoular at Vernon Street, Strathfield and the same name appears in the next three directories at Homebush Road, Homebush.²⁹ But the John Scouller trail had petered out – or so it seemed.

However, since the sixth edition appeared in 1904 and another book in the following year, a little further persistence was necessary. In the Directories for 1900 and 1901, the name John Scouller, 7 Avenue rd., Glebe, is listed in the Alphabetical sections,³⁰ but there is no indication of occupation, so this may have been another person. The entry does not appear in the following year and 7 Avenue rd. is occupied by somebody else.

In the 1903 Directory, however, we find:

Scouller, John, accountant, 105 Pitt st.

and he is also listed under both 'Accountants' and 'Auditors' in the Trades and Professional section.³¹ And these entries are repeated in the 1904 Directory³² but not thereafter.

Now, indeed, entries for him cease, but there are still some strange circumstances recorded that intrigue us.

In the 1906 Directory there are listed in the Alphabetical section the following:

Scouller, J. 11 Bayview st., North Sydney

Scouller, R. 11 Bayview st., North Sydney

Scouller Robert, manager Roy's photographic studios, 32 Pitt St.,

and, on turning to the Geographical section, under Bayview street – East side, we find:

11 Scouller James, accountant

Scouller Robert, photographer.

²²Sands, 1889, pp. 656, 807, 898, 899, 904, 988, 1039, 1098.

²³Sands, 1890, pp. 708, 875, 975, 1133.

²⁴Sands, 1891, pp. 650, 790, 871, 878, 1038, 1090.

²⁵Sands, 1892, pp. 810, 894, 956, 1052, 1094.

²⁶Sands, 1893, pp. 844, 1093, 1140.

²⁷Sands, 1894, pp. 144, 858.

²⁸Sands, 1895, pp. 744, 943.

²⁹Sands, 1896, pp. 148, 768; 1897, p. 888; 1898, p. 920; 1899, p. 946.

³⁰Sands, 1900, p. 987; 1901, p. 1265.

³¹Sands, 1903, pp. 1097, 1206, 1216.

³²Sands, 1904, pp. 1096, 1212, 1222.

There is no Scouller entry under Accountants, but under Photographers there is:

'Roy's' Studios 32 Pitt st.³³

In 1907 and, indeed, until 1914 at least, these two Scoullers are listed alphabetically as being at Barton Avenue, Haberfield, but there are no occupational listings for them under accountants, auditors or photographers.³⁴

There is still one further curious circumstance to be noted. In the Directories for 1907, 1908 and 1909, alphabetically and under 'Stationers', the name of Robert Jolley reappears, in the latter category in bold capital letters and proclaiming the vocation of 'Wholesale Stationers, Fancy Goods Importers and Indentors, Fine Art Publishers, Importers and Publishers of Post Cards of the latest and most Novel Varieties'. The location in the first two of these years is 105 The Strand but a move to 416-418-420 George st. is listed in the 1909 entries.³⁵

One wonders whether James and Robert Scouller were related to John Scouller, accountant and author, and whether the reappearance of Robert Jolley on the Sydney scene was connected with James and Robert; but these are probably side issues.

The Directories had been fruitful and had yielded much interesting information, but they had also raised a number of questions. Our John Scouller was in Melbourne in 1877 but did not appear in the Directory for 1876. If, as indicated in his book, he had done his Yorkshire job in 1873 or 1874 and was in Melbourne by 1877, was it possible to find out when he arrived in Melbourne?

The State Public Record Office has passenger lists for ships arriving in the port of Melbourne for that period; they are not indexed but they were made available for perusal. I decided to play my hunch first on the 1876 arrivals. There were quite a lot of ships arriving in Melbourne in that year and many of the passenger lists were fairly long, and the names were not often set out alphabetically. A patient search was necessary, but it did bring the result that John Scouller was a steerage passenger on the *Carlisle Castle*, registered at 1457 tons, which left London on 8th August and arrived in Melbourne on 30th October, 1876. He was listed as single, aged 24, and, under the heading 'Profession, Occupation or Calling of Passenger', he was described as a settler.

³³Sands, 1906, pp. 466, 1156, 1461.

³⁴Sands, 1907, p. 1182; 1908, p. 1230; 1909, p. 1260; 1910, p. 1317; 1911, p. 1377; 1912, p. 1448; 1913, p. 1519; 1914, p. 1587.

³⁵Sands, 1907, pp. 980, 1543; 1908, pp. 1016, 1589; 1909, pp. 1045, 1622.

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His nationality was stated as English, but so was that of every other passenger on this list.

This fitted in neatly with the evidence of the directories. A single young man, with some experience in Britain as an accountant, arrives in Melbourne as a settler, takes up residence for a time at a hotel and starts out on his vocation; he uses the first opportunity to get his name listed in the directory in his professional capacity, operating from his hotel address before committing himself to the rent of a city office.

Although the State Public Library does not have its catalogued copy of the 1885 edition of the book, it does have some of the catalogues issued by George Robertson and Co. In those for 1880 and 1884 (none between these dates was available) Scouller's book appears under the heading 'Book-keeping' in the section on School and College books, its price being two shillings and six pence.³⁶ It was hoped that George Robertson might have made some little noise about the book since it was his own publication, but it was very discreetly placed in its category with nothing to draw particular attention to it at all. However, its listing is convincing evidence that it was published in 1880.

Letters sent to all the 'Scoullers' listed in the Melbourne and Sydney telephone directories brought a very good response, all of it negative in that none of the respondents was able to throw any light upon the John Scouller who wrote the book.

However, some interesting sidelights emerged. Most of the respondents stated that their father or grandfather had come from Ayrshire or Lanarkshire in Scotland, and my mode of pronouncing the name was gently but firmly corrected - it is pronounced as if written 'Skooler'. The name in fact is Scandinavian in origin, and, in the family of British surnames, is linked with Scholar, Scholard, Scholer, Schollar, Scholler, Scollard, Scoular and Scouler, the probable meaning being 'dweller by the shieling with a hut',³⁷ a shieling or shealing being '1. a piece of pasture to which cattle may be driven for grazing, 2. a hut of rough construction erected on or near such a piece of pasture'.³⁸

At the time of writing this paper nothing more is known of the life of John Scouller. What we know

³⁶*Select Catalogue of Books in Every Department of Literature, Science and Art, Now on Sale by George Robertson* (Melbourne, Sydney, Adelaide, 1880), p. 182; *Catalogue of Books in Every Department of Literature, Science and Art now on Sale at the Prices Affixed by George Robertson & Company Limited* (Melbourne, Sydney, Adelaide, 1884), p. 169.

³⁷P. H. Reaney, *A Dictionary of British Surnames* (London: Routledge and Kegan Paul, 1953), p. 285.

³⁸*Shorter Oxford English Dictionary*.

does not amount to a great deal. He was born in 1851 or 1852, possibly in Scotland, and came to Melbourne in October 1876. Prior to his migration he had been employed by a firm of London accountants about 1873. He practised in Melbourne as an accountant for several years, became interested in a stationery and fancy goods partnership, went to Sydney about 1885 or 1886 and practised there as an accountant and, for a time, at least, probably as Sydney representative of the Melbourne stationery firm. He had at least two successive partners in accountancy practice in Sydney, and he may have become involved in another stationery partnership. We cannot be sure, of course, that the 'J.' of J. and R. Scouller was our man, but if he was, this was the most enduring of his several partnerships. One wonders if the bonds of business partnership were reinforced by those of matrimony.

He did not become a member of any of the emerging professional bodies of accountants either in Melbourne or in Sydney, and after a considerable lapse of time he resumed practice in Sydney for two or three years. What was he doing between 1891 and 1903? And what happened to him after 1904? The probable answer to the latter question is that he went to Britain, for the preface to his second book, the *Practical Book-keeping and Accountant's Guide*, is subscribed 'London, 1st June, 1905'.

The work

Although it was now certain that the book had first been published in 1880, it was necessary to determine, if possible, what relation that first edition bore to the sixth, which was in my possession. It was necessary to confirm or refute the surmise I had made that the two were substantially the same.

As already mentioned, the Public Library in Melbourne seems to have lost or mislaid its copy, but the Mitchell Library Dictionary Catalogue of Printed Books recorded two holdings – a second and a third edition, 1882 and 1885 respectively, both published in Melbourne by George Robertson and both of pp. viii, 93. A request (made not directly but through the kind offices of another library in Melbourne) for a photostat copy of the second edition produced a microfilm of the third.

Since the work is not likely to be readily available to the audience to which this paper is addressed, I quote from it at length in several places, any emphasis being as it appears in the original.

Prefaces and Preliminaries

Examination of this third edition was both interesting and productive. The title page showed the author, 'J. Scouller', described the work to be a

'Third Edition, Enlarged'. There was a 'Preface to the First Edition' which was identical with that appearing in the sixth edition, but, while this was the only preface in the later work, there was also a 'preface to the Second Edition' in the 1885 publication. It seems worth giving this preface in full:

The gratifying success which has attended the issue of the first edition of *Practical Book-keeping*, together with the favourable notices which it has received from the press generally, besides the flattering opinions which have been personally expressed by those acquainted with the subject, have induced me to issue a second edition.

In this several small errors, which had been overlooked in the first edition, have received correction, one of these being of some importance, especially to those who wrought out for themselves the set of books according to the instructions given. This was an error in the starting balance-sheet, p. 44, where the Bank of Victoria appeared as Dr. for £3,537 17s 6d, instead of £3,537 17s od. Several pages of additional information have been added, which, it is hoped, will considerably enhance the value of the work. Amongst these will be found forms of *Revenue* and *Trade* accounts, besides patterns of books suitable for the peculiar accounts of Limited Companies, which we hope will commend themselves to the business public and others.

March 1882

J. SCOULLER

This third edition does not contain material given in the sixth edition as Appendix No. 2, covering discussions on 'Movement of Stock' and 'Profit on Returns'. However, it contains other material which does not appear in the later edition and which reads as follows:

SCOULLER AND JOLLEY
Accountants, Auditors and Arbitrators,
18a Little Collins-street, Melbourne
And at Sydney

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One of the preliminary pages is devoted to –

TESTIMONIALS

Theodore Jones & Co., London (Authors of Jones's System)

After long experience you have had in the working of our system in various branches of trade, your services would be highly valued by the large Mercantile Houses in Melbourne, if they are to have their accounts arranged and balanced on the same principles as the large Wholesale Houses here.

Jones's English System of Book-keeping is now so widely known, that the fact of your having been for some years one of our principal confidential clerks will of itself be a sufficient recommendation.

Mr. Alderman McArthur, M.P. (W. & A. McArthur, London)

We are in receipt of your favour of 8th March, also the balance sheets and accounts from the Auckland House . . . We are exceedingly well satisfied with the way in which the work has been performed. If we can render you any service in the way of recommendation it will give us much pleasure.

A. McArthur & Co., Warehousemen, Sydney

Your system (Jones's) is working most satisfactorily, and we have every reason to congratulate ourselves on having adopted it.

W. McArthur & Co., Warehousemen, Auckland

You will be glad to hear your new system (Jones's) works admirably. No time is lost in seeking out mistakes, which used to be the case when the old system was in use . . . Its adoption by most of the large houses is only a question of time.

McArthur, Morrow & Brind, Melbourne

We have pleasure in recording our satisfaction with Jones's System as introduced by you in our office. We are much pleased with the various checks of the system, and the manner in which the work of the office is subdivided, insuring perspicuity and accuracy in every branch. Having had three or four years' experience of the system, we have pleasure in recommending it to any firm requiring a good system of Book-keeping.

We now know the identity of the London firm of accountants for whom Scouller worked before migrating to Australia. We also note the frequency of the name 'McArthur'. In the text, the illustrative set of books is for a hypothetical partnership of which James McArthur and John Smith are the members, the former having a major interest (63.9%) in capital and a two-thirds share of profit. Was this a means of expressing gratitude by immortalising his patrons?

There was only one difference between the editions in the textual material proper. In the earlier edition the balance of Duty, Freight &c. account was closed off directly to Profit and Loss account; in the sixth edition it was closed off to Merchandise account which in turn was closed off to Profit and Loss.

We can thus reconstruct the first edition (except, perhaps, for some small, unspecified errors) and consider its characteristics.

The object of the work is set out in the preface: 'to explain, in as simple and lucid a manner as possible, the principles and practice of that useful science and art, in order that merchants, tradesmen, and others may be enabled to arrange their business books in a systematic manner, and to take an intelligent supervision of the work of their book-keeper; by this means serving to avert those unfortunate cases of embezzlement and breach of trust arising from the want of such supervision, which are of too frequent occurrence.'

It is thus primarily intended as a businessman's book and as an aid to what we call nowadays 'internal control'. Today we are apt to take double entry so much for granted that we often do not realise that its introduction in practice was frequently a basic first step in internal control.

But he also wished 'to assist those accountants and book-keepers whose opportunities of gaining a full knowledge of accounts have been limited by circumstances, in arranging and improving the system of books and accounts placed under their charge, so that they may attain the desideratum of all good book-keeping – viz., "The maximum of perspicuity with the minimum of labour".' There is at least an implied commentary here on the qualifications required for

employment as a book-keeper or accountant in those days. This was, let it be recalled, before the formation of any professional body of accountants in Victoria.

There was 'still another class to whom the author hopes the present work will be of service. In all large offices there are various clerks whose attention is directed solely to one particular ledger or other business book, in keeping which they may have attained great proficiency; but their work is rendered to a large extent mechanical, from the fact that the principal, or his confidential book-keeper, keeps the private accounts of the firm, and makes up the final balance at the end of the year. To all such the profit and loss account and balance-sheet are a profound mystery. The author having himself, at one time, belonged to this class, has a vivid recollection of his desire to find some friend who would explain the use of the different books, and initiate him into the mysteries of double entry. He can, accordingly, sympathize with their difficulties, and is hopeful that this work may fulfil the part of such a friend, in thus explaining the use of the various books and their relations to each other; also, how the profit and loss and the real worth of the merchant may be ascertained, and the means of proving the accuracy of the whole by the balance-sheet. By thus exercising his thinking faculties in gaining a knowledge of the principles of book-keeping, the young clerk will be saved from becoming a mere machine, and will be preparing himself to fill a more important position when the opportunity may present itself; and to those who apply themselves in this manner, such opportunity seldom fails to open up. This, at all events, has been the experience of most men who have been successful in the battle of life.' This is recognisable as a representative expression of the noble Victorian social sentiment.

The schools, although mentioned last, are not overlooked. 'It is hoped that this work will also be found suitable for instruction in schools; and, having been prepared upon the basis of books in actual use in merchants' offices, it will form a useful addition to the studies of youths intended for commercial pursuits.'

He further points out the merits of his book in a note of self-justification. 'Numerous books treating of the science and art of book-keeping are already in existence, and it may be thought by some that any addition to their number is scarcely required. But, while some of these are works of standard excellence, yet it will be found that the greater number are of a very antiquated and rudimentary character indeed – more suited to the class-room than to the practical requirements of the counting-house. As already remarked, this work has been prepared upon the

basis of books in actual operation in business houses of the first standing in various departments of trade, and patterns of business books are given suited to different classes of business. It would, of course, be utterly impossible, within the limits of a single volume, to present patterns entirely suited to every description of business; but the use of the various books is fully explained, so that – following out the principles laid down – an intelligent book-keeper will have no difficulty in adapting such patterns, amplifying or modifying the same, according to the special requirements of the business with which he has to deal.'

The textual material comprises:

- (i) an Introduction of some twelve pages;
- (ii) an exposition of thirty pages of Practical Book-keeping in which the recording process and the use of various books of account are explained;
- (iii) an illustrative set of books by double entry covering 37 pages;
- (iv) in the second and later editions, an appendix with examples of a Trade account, a Revenue account and Balance Sheet for a colliery, and books for limited companies;
- (v) in the sixth – and possibly an earlier – edition, a further appendix with discussions on 'movement of stock' and 'profit on returns'.

Introduction – errors

The introduction is a lively essay on errors – how they occur and how they can be guarded against. Compared with a typical, widely used school text of that time, such as Inglis's *Book-keeping by Single and Double Entry*, this introduction certainly provides the basis for a more practical approach, unusual if not unique among contemporary introductory texts.

Scouller writes simply but persuasively and cites cases from his own experience. He is eloquent on the drawbacks of 'single entry' which, at the time he wrote, was a common feature of school texts and other manuals of book-keeping.

Under the heading 'How Errors Occur Inadvertently' he gives some of his own experiences. 'A. B. and Co., a large firm in the soft goods trade in Glasgow, N.B. [North Britain, i.e. Scotland], arranged to dissolve partnership. Owing to certain differences among the partners, the books had not been regularly balanced for about four years; and, in these circumstances, one of the leading firms of accountants in that city was employed to make up a balance-sheet as a basis for dividing the assets of the firm. In due time the document was handed in, and having been carefully scrutinized and *found correct*, a sum of money was paid over in settlement by one branch of the firm to the other. Matters were thus settled

between the parties, with the exception of an item for fixtures which was in dispute, and some doubtful debts which were in suspense. Two years after the dissolution, the accounts of A. and Co., one of the branches of the late firm, having become hopelessly involved, the writer was employed to put them upon a proper footing, and to balance their books up to date. In going over the dissolution balance-sheet, prepared by the accountants previously referred to, in order to open the proper accounts in the ledger, it was immediately discovered that an error of £1,250 had been made; this amount, representing certain bills which had been *discounted*, having been included as an *asset*, and charged as such to this branch of the late firm; while, as a matter of course, their value had already been received from the bank, and passed to the Dr. of cash account. Thus this branch of the firm was charged with an asset for which they had received no value whatever, and which in reality belonged to the bank. And this occurred notwithstanding the fact that the balance-sheet containing such an error had passed through the hands of an independent professional accountant of recognized ability, besides the parties themselves who were most interested. Such facts as these speak volumes as to the folly of keeping books by single entry.' (p. 2).

Apart from its intrinsic merits, this story raises further speculations. It seems likely, but of course it is not certain, that A. and Co., for whom Scouller acted, were operating in Glasgow; if so, it suggests that Scouller may well have been of Scottish birth, and, if he was being employed by a London firm of accountants in 1873 or 1874, that he did this job before then – and at quite a tender age. One also wonders whether the accountants who prepared the faulty balance sheet were members of the Institute of Accountants and Actuaries in Glasgow which had been formed and incorporated by Charter as early as 1853–4.

He gives another example of the failings of single entry. 'Some few years ago, an old-established firm in the woollen trade in Leeds, Yorkshire, who had been in the habit of keeping their books by single entry, were desirous of adopting the more correct system of double entry, and the writer was employed, for a firm of London accountants, to effect the desired change, and to balance their books for the year ending 31st March, 1873. The book-keeper, evidently regarding this as an intrusion into his domain, was inclined to be disagreeable, and determined to make up his usual single entry balance-sheet, in order to show that one system was quite as good as another. Both balance-sheets were eventually made up, and upon comparing the results it was found

that they differed very slightly. Upon closer examination, however, first one error of £600 was discovered in the liabilities, then another of nearly similar amount was discovered in the assets (the one counter-balancing the other as nearly as possible), while an invoice for goods sold was found to have been omitted altogether in a customer's account. Thus, in that single entry balance-sheet, errors were discovered amounting in the aggregate to something over £1,200, although the apparent difference was a mere trifle.' (p. 3).

Under the heading 'Means of Falsifying Books', while proclaiming the advantages of double entry, he recognises that it can be manipulated to conceal dishonest activities. 'Book-keeping by double entry, in hands of an *honest* book-keeper, is almost perfect, and forms an excellent check against errors and omissions; though . . . there may be a *balance of errors* even when the books appear correct. But, in the hands of one inclined to be dishonest, it offers many facilities for furthering his nefarious designs. It is well that this truth should be known and recognized, so that those who accept the testimony of their balance-sheet in proof of the absolute correctness of their books may know on what a *broken reed* they are depending. We shall, therefore, refer to a few of the methods by which a dishonest book-keeper may successfully cover up his defalcations in a double entry set of books.' (p. 5).

He gives a number of examples which would now be familiar to students of auditing through their exposure to much later texts on auditing, and he then says: 'Such are but a few of the means open to the dishonest book-keeper of getting over his monetary difficulties, or by which one who is covetous may help himself to a share of his master's property, at the same time causing his books to bear false witness in his favour.' (p. 7). He justifies his exposition in these words: 'It may be objected that, in thus exposing the defects of the double entry system of book-keeping, we are putting in the hands of young men having the charge of their employers' cash and books a means of appropriating the same without fear of discovery – of suggesting ideas to their minds which, being allowed to revolve therein, at first without dishonest intent, may eventually form themselves into definite plans, causing them to fall an easy prey to temptation when it comes, but which otherwise might never have entered their minds. To such we reply, that one or other of the methods to which we have referred, more or less complicated, would be almost sure to suggest itself to the dishonest clerk before he ventured to take the rash step which might consign him to a prison for many years, and blast his prospects for all time to come; but knowing that the

schemes which he may have very cleverly concocted for avoiding discovery are not unknown to others, it will make him think twice before committing himself. Besides, in the words of the proverb, "forewarned is forearmed"; and, being aware of the dangers to which he may thus be exposed, the employer will be able to adopt such means as shall effectually prevent irregularities of this nature.' (p. 7).

In writing about 'Means of Preventing Errors and Defalcations', Scouller is critical of contemporary standards of auditing practice. 'A great deal of what goes by the name of auditing is mere farce, being useless, and, worse than useless, in fact, positively hurtful and misleading; because those interested, partners or shareholders, are thereby lulled into a feeling of security, when all the time they may be resting on the brink of a volcano, ready at any time to overwhelm them in ruin and disaster. Of this we have recently had an example of a most appalling character in the case of the City of Glasgow Bank, which suddenly collapsed in the midst of apparent prosperity, as indicated by the large dividends which were being paid, and the satisfactory state of affairs shown in the half-yearly balance-sheets. These balance-sheets were prepared by the accountant, under instructions from the manager, and were understood to be audited by a committee of the directors; but the manner in which they performed this important duty is only too apparent from the circumstances which have since transpired. It appears, from evidence given at the trial, that they simply put their names to documents which they did not understand, having the most implicit confidence in the figures put before them by the managers and officials of the bank.' (p. 9).

The City of Glasgow Bank commenced business in 1839; its head office was in Glasgow and it had branches throughout Scotland. In late 1857, at about the time that the Western Bank of Scotland closed its doors, it suspended payment, but it resumed business early in 1858. In 1862 it was registered under the Joint Stock Companies Act of that year and continued operations until it 'finally ceased to do business and closed its doors on 2nd October, 1878.'³⁹ As a result, some of the directors were convicted of falsifying and fabricating balance sheets and others of uttering and publishing them, knowing them to be false. The trial lasted twelve days, sentence being pronounced on 1st February, 1879. Thus, at the time Scouller was writing it would have

been a recent, perhaps the most recent, major financial scandal.

He goes on to give a local instance. 'We have, likewise, had in our own city an example of a similar nature, but, happily, upon a much smaller scale, in the case of the Provincial and Suburban Bank. The investigation which was made when this institution stopped payment revealed a most disgraceful state of affairs. The *paid up* capital and assets were much overstated, the circulation was understated, and the sworn returns were proved to be entirely false; while dividends were paid with the money of too-confiding depositors. The half-yearly balance-sheets, notwithstanding that they contained such flagrant errors, professed to be audited, and bore the signature and certification of a *professional auditor*.' (p. 9).

This was a case that occurred in Melbourne, the bank being located in Smith Street, Fitzroy.⁴⁰ The story is briefly told by A. R. Hall. 'The year 1872 saw the formation of the Provincial and Suburban Bank, the first new bank since the entry of the Commercial Bank of Australia in 1866 . . . The improvement in market conditions which followed the successful floating of a £3 million Victorian government loan in March 1879 was short-lived. Early in May the first failure of a Melbourne bank of issue occurred when the Provincial and Suburban Bank closed its doors. The difficulties of this recent, small bank drew attention to other newcomers in the banking field. Early in June the Australian and European Bank followed in the Provincial's footsteps. Its failure induced a run on the City of Melbourne Bank which, however, was soon able to convince depositors of its solvency. Unlike the Provincial, whose manager and directors were to be prosecuted for fraud . . . the City of Melbourne Bank was sound . . .'⁴¹

Scouller is indignant, for he goes on: 'Such facts as these serve to bring the profession of auditor into disrepute, and there is very little wonder indeed. The profession of accountant or auditor is one which requires not only a special fitness, but likewise a considerable professional training and experience. But how often do we find, under this designation, men who have been unsuccessful in other walks of life, and who take to this business as a last resource, for the sole reason that very little capital is required? Should such be fortunate enough to have influential friends who can *pull the wires* properly, they often succeed in getting appointed to positions requiring

³⁹C. T. Couper, *Report of Trial of the City of Glasgow Bank Directors* (Edinburgh: The Edinburgh Publishing Company, 1879), p. 2.

⁴⁰*Sands and McDougall Directory*, 1876.

⁴¹A. R. Hall, *The Stock Exchange of Melbourne and the Victorian Economy 1852-1900* (Canberra: A.N.U. Press, 1968), pp. 87, 89.

professional skill and technical knowledge, which in such cases are conspicuous by their absence.' (p. 9). As a flagrant instance of a problem that was 'only too common', he mentions 'the trial of a defaulting country clerk, in which certain erroneous accounts were *audited and found correct* by

his
A ——— X B ———
mark'

but added 'No doubt this is an exceptional case.' (p. 10).

He then draws attention to two features of the book-keeping system which he advocates. The cash book is arranged for regular deposits of all cash receipts into the bank and for all payments except those out of petty cash to be made by cheque; and a balance book is used in which the total postings on each side of each account are listed. The former 'will prevent errors arising from omitting to enter in the cash-book sums received or paid, and thus simplify the work of balancing', and also, 'as it necessitates only a small standing balance of cash in hand each day, it thus, to a great extent, removes the temptation arising from having a considerable floating balance always on hand.' (p. 10). The balance book 'shows that the various amounts passed through the ledger are *only* such as have been properly recorded in the various books designed for that purpose; at the same time, it proves that the Dr. and Cr. postings are of equal amount; and, also, that the *whole* of the transactions for a given period have been properly recorded in the various accounts in the ledger.' (p. 10).

As suggested earlier, what he is advocating is the use of a system to promote some degree of internal control.

He expresses the view, however, that 'the most complete system . . . is that of Theodore Jones and Company, of London, who have prepared certain balance-books, and a system of checks, which are now exclusively adopted by the large business houses of Great Britain. These balance-books are so arranged as to show a complete analysis of all the postings to the ledgers for a given period, so that everything which passes through the ledger must appear therein in its appropriate column.' (p. 10). After a brief description of these, he is, perhaps not unnaturally in the circumstances, enthusiastic about their advantages. 'By using these balance-books, several of the large companies in London and elsewhere have their balance-sheets out within a few days after the close of the financial year. It is with much confidence that we recommend Jones's balance-books to the

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notice of the commercial public in the Australian colonies, having used them extensively for some years in the auditing and balancing of business books in various departments of business. We have also had the opportunities of observing their practical working in several large establishments, one of which having about fifty different departments, and doing a general business exceeding two millions sterling per annum in amount; and, notwithstanding the fact that their transactions are numbered by hundreds of thousands, they are able, twice a year, to strike a correct balance in a remarkably short space of time – a thing almost impossible without their use.' (p. 11).

Theodore Jones was the son of Edward Thomas Jones whose 'English System of Book-keeping by Single and Double Entry', published in 1796 after an ingenious publicity campaign, was one of the most controversial books in the history of accounting literature.⁴² The work went through at least nineteen editions and was apparently still alive in the third quarter of the nineteenth century. An interesting link is that both the sixteenth and nineteenth editions (of which I possess a copy of the former and have recently seen a copy of the latter) bear the name of Simpkin, Marshall & Co. as publishers; it seems likely that they were also involved in the intervening editions. These editions do not bear a publication date, but the sixteenth contains a number of testimonials as an insert and one of these bears the date, 1855, so it was probably published after that, and the nineteenth later still. The dates of transactions, which are identical in both of these editions, are of 1836.

Scouller then makes an interesting observation on business or, at least, counting-house relations in the nineteenth century. 'In some cases employers are averse to the adoption of such means of preventing and detecting errors and defalcations, from a feeling of delicacy towards their *employés*, as if, by so doing, they would be casting a reflection upon their honesty'; however, he goes on, 'but in most cases it will be found that book-keepers would prefer to have an independent audit, or some other means of demonstrating their correctness; while only those who have somewhat to conceal could possibly have any objection to such a course.' (p. 11).

This introductory chapter or section concludes with a lengthy and rather convoluted sentence which carries a homely message. 'Of course it is not con-

⁴²See B. S. Yamey, 'Edward Jones and the Reform of Book-keeping 1795-1810', in A. C. Littleton and B. S. Yamey, *Studies in the History of Accounting* (London: Sweet and Maxwell, 1956), pp. 313 ff.; B. S. Yamey, H. C. Edey and H. W. Thomson, *Accounting in England and Scotland 1543-1800* (London: Sweet and Maxwell, 1963), pp. 175 ff.

tended that Jones's system will absolutely prevent defalcations, because a man, if determined to be dishonest, will find means to circumvent the most perfect system of checks; but where that system is in use, combined with a reasonably careful scrutiny, errors or defalcations are bound to be discovered; and where the employer, from want of time or inclination, or from not having a knowledge of accounts, is unable to attend to this duty personally, he ought to employ for that purpose an accountant who has made this branch his special study, because it should always be remembered that no man, however honest his intentions may be, is above being tempted, and it is well in this, as in other matters, to see that the stable door is safely locked ere the steed be flown.' (p. 12).

Practical book-keeping

The next section, which is titled 'Practical Book-keeping', opens with a statement of the purpose of book-keeping. 'The science of book-keeping treats of those rules which are necessary for recording mercantile transactions in a clear and systematic manner, in order that it may readily be ascertained –

1st. How much is owing to the merchant by his various debtors, and how much is owing by him to his various creditors.

2nd. The profit he may have gained or the losses sustained in trading, and the amount of *his real worth or stock-in-trade*.' (p. 13).

Note here the equating of the last two expressions. The word 'stock' evidently has its earlier connotation of capital, and for Scouller, at least in this context, 'stock-in-trade' does not mean what it came to mean over the next couple of decades, namely, goods acquired for sale.⁴³

Then comes a very brief comment on single entry and its rejection in favour of double entry. He gives a classification of accounts – personal, property and nominal or fictitious. He then describes and illustrates the books required for a general merchant: Purchase-Book, Sales-Book, Cash-Book, Bills Payable Book, Bills Receivable Book, Journal, Ledger, and Balance-Book.

In this section, there are further references to Jones. 'The best style of journalism [*sic*] is that adopted in Jones's English system, which provides that, in every journal entry, the Dr. or Drs. shall, in all cases, precede the Crs. – that the amount of the former shall be entered in the left and the latter in the right hand money column, and that the sum of the

Drs. and Crs. in each entry shall be of equal amount. It also provides that no sums other than the posting amounts shall be entered in the money columns, which require to be added up, and the amounts carried forward from page to page, in order to exhibit periodical totals, with which the postings to the ledger, Dr. and Cr., as shown in the balance-book, must agree if correct.' (p. 34). And a few pages later: 'Jones's balance-books, to which we have already referred, are superior to any other for proving the correctness of the books, being so arranged as to exhibit an analysis, for a given period, of all transactions passed through the ledger. These books, which are copyright, may be obtained from the publishers, Theodore Jones and Co., London, through the author, or any importing bookseller.' (p. 40). From this it seems clear that in Scouller's view trading in stationery – at least in the proper sort of stationery – was not inconsistent with the professional practice of accountancy and auditing.

This section concludes on a cheerful note. 'Having agreed that the Dr. and Cr. balances in this manner, the book-keeper has the pleasure of knowing that his work during the preceding year has been brought to a satisfactory conclusion, and he can now begin the work of the new year with renewed zest, arising from the consciousness of "something attempted, something done".' (p. 42).

The third section, also titled 'Practical Book-keeping', is sub-titled 'Set of Books by Double Entry', and comprises an illustration of a complete set of books 'as they would appear in actual operation in a merchant's office'. The illustration taken is that of 'the firm of James McArthur and Co., woollen merchants, of Melbourne, whose books have hitherto been kept by single entry, but who desire to adopt the more correct system of double entry. The partners are James McArthur and James Smith, the interest of the former being two-thirds, the remaining one-third being the interest of the latter.' (p. 43). In the books themselves, however, the latter partner is shown as John Smith.

This set of books contains two features which, I think, would have been unusual in expositions of that period. First, the Cash-Book has a three-column ruling on each side: Discount, Cash Received and Bank Dr.; Discount, Cash Paid and Bank Cr. This is a great improvement on the cash book rulings in Jones. Secondly, at the end of the accounting period (a half-year), a 'Bad Debts Reserve Account' is raised and shown on the Liabilities side in the balance sheet. The debit is to Bad Debt Account, but no explanation other than the narration in the journal entry, 'Amount written off as Bad Debt Reserve.' (p. 64) is given.

⁴³For a discussion of various meanings of 'stock' see L. Goldberg, 'The Word "Stock"', *Australian Accountant*, January 1956, pp. 11 ff.

Appendices

The appendices also have some interesting features. In the first, which was published at least as early as 1885 and probably in 1882, he states that 'the periodical profit and loss accounts ought to be more than simply an aggregation of the various sums of the purchases, sales, expenses, &c., which go to show the net results of the trading'. (p. 81). He goes on: 'These ought to become clear statistical records of the business, so arranged that they may exhibit a full analysis of the working thereof in its various departments. By a comparison of these from year to year the merchant will obtain a large amount of information which cannot fail to be very useful to him in carrying on the various operations in which he may be engaged; inducing him to launch out more freely in this direction as he sees, from such records, the prospect of a profitable trade, or to curtail in the other direction as he sees it result in loss. This is to be attained by a proper subdivision of the books according to the various branches of business in which he may be engaged, with a thorough analysis of the various expenses relating thereto. By this means he will ascertain not only the profits actually made, but a careful comparison of several years may serve to indicate whether by a judicious reduction in prices an increased trade may not be done for an enlarged net return of profit; or other information of an equally important character.' (p. 81). And, a little later: 'It is of great importance that the expenses of any business be well looked after, for it is generally found that these have a tendency to increase from year to year in a degree quite out of proportion to the increase of the business.' (p. 82).

He presents a Revenue account for a colliery which shows expenses per ton of output and net average price realised. 'By this means', he avers, 'it is seen at a glance whether the selling price is sufficient to cover the cost of production, and leave a fair margin of profit. If not, it will be readily seen that, by increasing the *output*, the cost per ton will be proportionately reduced; because, with the exception of *wages* and *royalty*, most of the other items remain the same, or nearly so, whether the output be more or less. At the same time it may be found that salaries, commission, or other expenses are too high, and – constrained by the stern logic of facts – it may be found necessary to adopt a general policy of retrenchment.' (p. 83). Obviously, he recognised the distinction between fixed and variable costs.

He also gives a Trade account 'suitable for most mercantile businesses', from which 'it will . . . be seen at a glance whether the advance of profit added to the cost of the goods has been adequate to meet the expenses and leave a fair proportion of profit as

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interest on the capital employed in the business. If not, the merchant will be prepared to take such steps as shall have the effect of bringing these into a more satisfactory relationship. Where it is possible, it is desirable to have the business subdivided into different branches, or departments, so that it may be discovered which are remunerative and which are not.' (p. 83).

Further: 'At page 88 is an example of a simple form of balance-sheet, in which the liabilities and assets are clearly stated, so that the realizable assets may readily be compared with the current liabilities, &c.' (p. 83). This is an early step towards modern classification.

He also presents rulings for 'Special Books for Limited Company', comprising Applications for and Allotment of Shares, Shareholders' Ledger, Register of Shareholders' Addresses, Register of Transfers, Call Register and Register of Shareholders, the last-named being the annual List and Summary required to be registered within fourteen days after the General Meeting.

Appendix No. 2, which appears in the 1904 edition, and possibly earlier, has, under the title 'Movement of Stock' a clear exposition of what we now call stock turnover and the significance of increasing its rate. (It may be noticed that 'stock' here has the meaning of merchandise.) He gives the formula quite explicitly: 'In order to ascertain the ratio per annum in the movement of stock, it is necessary to deduct the gross profit from the amount of sales, which will give the *net cost* of goods sold. Divide the net cost by the amount of stock, using two places of decimals, and the result will be the movement of stock for the year.' (p. 99). He points out further: 'If the yearly movement of stock be required on six months' transactions, proceed as above, and multiply the result by 2. For three months, multiply by 4, and for one month, by 12 – this will give the rate per annum. A merchant will thus be able to check the movement of his stock monthly, quarterly or half-yearly.' (p. 99).

This appendix also has a table 'for calculating advances of profit', that is, profit margins; for example,

'To realize 5% profit on returns add 1-19th to the cost price.' (p. 100). It was in relation to this table that the reviewer in *The Accountant* pointed out 'a somewhat curious error . . . where it is stated that in order to realize 50% on returns it is necessary to add double to the cost price. This result would, of course, be achieved by doubling the cost price. If double the cost price were added to it, the profit would be

66 2/3% of the turnover.'⁴⁴ As ditto marks appear in the table under the word 'returns' but not under 'add', the reviewer evidently read the last line as 'add double', whereas the intention of the author was almost certainly to have said 'to realize 50% profit on returns double the cost price.' The mistake is due to a lapse in setting out, either by author or typesetter.

Conclusion – tentative

It cannot be claimed that John Scouller's book was a major contribution in the history of accounting thought, but, at the time it was written, it was, in some respects at least, an advanced piece of work. For it must be remembered that 1880 was the year of the formation of the Institute of Chartered Accountants in England and Wales and at that time the accounting literature was still pretty thin. Indeed, although there were numerous books on procedural book-keeping, works on accounting, as it was shortly to be distinguished, scarcely existed, at least in the English language. The era of Pixley and Dicksee, Matheson and Garcke and Fells, was still to come.

Although Scouller's system of book-keeping may not seem to us to be startlingly original and was somewhat derivative from Jones, it nevertheless did have several points which are not found in the texts or manuals of his contemporaries. The emphasis upon practical application is strong and well-placed, and the fact that three editions were published by 1885 suggests that his contribution to the business world of Melbourne and Sydney in that period was not wholly negligible, even if it is virtually impossible to trace now.

⁴⁴ *Accountant*, December 10, 1904, p. 730.

Appendix – Some nineteenth century chronology

Scotland

- 1853 Society of Accountants in Edinburgh formed. Charter 1854.
- 1853 Institute of Accountants and Actuaries in Glasgow formed. Charter 1855.
- 1867 Society of Accountants in Aberdeen formed and incorporated by Royal Charter.

England

- 1870 Incorporated Society of Liverpool Accountants formed.
- 1870 Institute of Accountants formed in London.
- 1873 Manchester Institute of Accountants formed.
- 1874 (October) *The Accountant* first published.
- 1877 Sheffield Institute of Accountants formed.
- 1880 Institute of Chartered Accountants in England and Wales incorporated by Royal Charter.
- 1881 First edition of Pixley's *Auditors – Their Duties and Responsibilities*.

Australia

- 1885 Adelaide Society of Accountants formed.
- 1885 Preliminary meeting for a 'Society of Accountants', Melbourne (December 3).
- 1886 Incorporated Institute of Accountants of Victoria formed (April 12), incorporated March 1, 1887.
- 1894 Sydney Institute of Public Accountants incorporated.

Book Reviews

European Financial Reporting: 3 Italy. *M. I. Stillwell.* Institute of Chartered Accountants in England and Wales, 1976. xii + 237 pp. £6.

Italian accounting, which from the thirteenth century to the sixteenth led the world, has in modern times become a byword for backwardness, inefficiency and dishonesty, and in this league Italy is by common consent placed bottom among EEC countries. Mr. M. I. Stillwell, a partner in Coopers & Lybrand, worked there for 2½ years (1972-74), travelling extensively from his base near Milan and acquiring a profound and detailed knowledge of current practice. He is thus in an unrivalled position to interpret to British readers the Italian accounting scene, and to confirm or refute the prejudices entertained about it here.

As the third in the English Institute's series on accounting in Europe, Mr. Stillwell's volume is a worthy successor to the first two by J. H. Beeny on West Germany and France. Like them, it outlines the legal, financial and fiscal background to business in the country, before describing the work of the accountant in business and professional practice, and the state of the art in Italy. It soon becomes clear that, with every allowance for popular exaggeration, there is strong reason for the low esteem in which Italian accounting is held, inside and outside the country, and the various factors are expounded in a lucid and succinct manner, with ample statistical evidence and copious illustration.

The forms of business organisation, particularly the limited company (*società per azioni, società a responsabilità limitata*), are rational enough, and not unlike those in other industrialised countries. The corporate sector is much smaller than in the UK, whose population is about the same – Italy having some 50,000 companies to our 600,000 – but some corporations are very large and profitable, with modern and energetic managements, and there is no obvious reason why their accounting functions should be markedly inferior by international standards. It is the level of financial reporting which is so deplorably low, and the causes are complex and seemingly intractable.

The legal framework is provided by the basically Napoleonic Civil Code, which specifies in consid-

erable detail the items to be shown in the balance sheet and (since 1974) in the profit and loss account. This section of the Code appears to have been drawn up by lawyers who understood double entry book-keeping and not much more; debit balances go on the left and credit balances on the right, regardless of their nature and with no summarisation or netting-off. Thus, the cost of fixed assets goes under 'assets' and the depreciation provisions go under 'liabilities', and similarly with debtors and bad debts provisions, while in the profit and loss account opening inventory and purchases are debited, and sales and closing inventory credited. The order of items in the balance sheet is unsystematic (though with some regard for liquidity), and there is no sub-total of shareholders' equity – the profit and loss account balance is usually placed last, as a balancing item! Furthermore, the Civil Code lays down rules for valuation of assets and liabilities, generally on the basis of historical cost, but using a form of LIFO for inventory, and relating the stated values of quoted investments to average market price for the year or part of it. Consolidated accounts are not required, and seldom provided.

The tax laws conflict in many respects with the Civil Code, and as expenses are allowed only if entered in the accounts, fiscal considerations generally prevail over sound accounting practice. For example, the revenue authorities grant generous rates of accelerated depreciation to encourage investment in industry; this depreciation is entered in the books, and profits and fixed asset values are understated. Far worse are the effects of the long-standing suspicion and antagonism between tax officials and taxpayers; folklore about Italian tax evasion is well founded, and the authorities counter it by arbitrarily increasing assessments, which the firm's accountants have then to negotiate down to a more tolerable level. Often this process takes years, making it virtually impossible to account for tax in any scientific manner; sometimes the liability is recognised only in the year when it is agreed, sometimes it is provided for on a minimal basis, so as not to prejudice negotiations for a settlement.

The Italian stock exchanges are in a very weak position to exercise any influence on financial

reporting standards. Only a few hundred companies are listed (compared with over 3,000 in London alone), the workings of the exchanges are hidebound and bureaucratic, and in any case most companies raise the bulk of their long-term capital in the form of loans from specialised credit institutions, rather than in equity shares. The accountancy profession is also weak and ill-organised by EEC standards (a *dottore commercialista*, roughly equivalent to a chartered accountant, can qualify purely by examination, without any practical experience), and it concentrates its main efforts on legal and financial advice and tax negotiation; it has never attempted to lay down any 'generally accepted accounting principles' or standards of audit practice. Company audits are conducted by a *collegio sindacale* of three, or five, *sindaci*, not all of them qualified accountants. Their report is long and detailed, but devoted largely to a comparison of current and previous year's figures, and to a review of valuation methods; there is no real attempt to appraise the accounting system as a whole, or to form an opinion as to whether the final accounts show a 'true and fair view'. Such persons are scarcely competent to penetrate behind the 'legal' books of account (regulated by the Civil Code), which seldom tell the full story; many companies keep an 'unofficial' set of books, showing the effects of systematic suppression of transactions by means of secret bank accounts abroad, false invoices, clandestine commissions, bribes to officials and politicians, and other nefarious practices.

Published accounts are as thoroughly unreliable and uninformative as one could expect from a socio-economic system in which businessmen are as strong and unscrupulous, and regulatory agencies as weak and corrupt, as Mr. Stillwell so ably describes. He does, however, offer hopes of amelioration. From 1974 the Italian government has introduced a reformed, and less arbitrary, taxation system, giving more encouragement to the honest businessman to report his transactions accurately. It has also set up CONSOB (*Commissione nazionale per le società e la borsa*, or National Commission for Companies and the Stock Exchange) as a kind of Italian SEC; but it is too early yet to see how effective these measures are likely to be. A stronger force for good may well be the great international accountancy firms, whom the larger corporations are beginning to retain as auditors in addition to the mainly useless *sindaci*.

Besides the clear and comprehensive text, Mr. Stillwell has provided specimen accounts and reports in translation – those of SMI (*Società Metallurgica Italiana S.p.A.*) for 1974; a table of differences between UK and Italian reporting practices; and an extensive glossary, in both directions,

of Italian and English business and accounting terms. His book thus furnishes British accountants with a reliable guide to Italian practice, and serves as a corrective to much anecdotal speculation on the subject.

University of Nottingham

Geoffrey Alan Lee

Current Accounting Literature 1971. Edited by M. G. J. Harvey. London, Mansell, 1971. xii + 586 pp. £7.50 (paperback £5.00).

Current Accounting Literature 1972. Compiled under the editorial supervision of Kathleen M. Bolton. London, Mansell, 1973. xiii + 242 pp. £6.00.

Current Accounting Literature 1973. Compiled by Amana Baig . . . under the editorial supervision of Kathleen M. Bolton. London, Mansell, 1974. xiii + 276 pp. £8.00.

Current Accounting Literature 1974. Compiled by Amana Baig . . . under the editorial supervision of Kathleen M. Morris. London, Mansell, 1976. xiii + 262 pp. £11.00.

The flow of books on accounting and related subjects is unending and practitioner and academic alike need the help of a good up-to-date bibliography. There was a time when one's personal library would suffice but this is long past. Only the specialised libraries of the professional accounting bodies can hope to keep up. The finest of these in Britain and perhaps in the world is that of the Institute of Chartered Accountants in England and Wales in Moorgate Place, London, E.C.2. In 1971 its reference and lending stocks were separated, the reference library being confined to material of current interest. *Current Accounting Literature 1971* is a catalogue of the reference library as at 31st August 1971. Three Supplements have since been published. These include not only books added to the English Institute's library but also to those of the Institute of Chartered Accountants of Scotland (Edinburgh and Glasgow libraries), the Institute of Chartered Accountants in Ireland, the Association of Certified Accountants, the Institute of Cost and Management Accountants and (for 1972 only) the Liverpool Society of Chartered Accountants.

Each volume contains an author catalogue, a classified subject catalogue and a subject index preceded by a brief explanation of the Universal Decimal Classification. There is also a periodical catalogue, a serial publications catalogue (except for 1971), a list of statute and case law holdings not catalogued separately and a list of statistical services and other sources of financial information.

Reviewers of bibliographies can only dip and test and compare. Does, for example, *Current Accounting*

Literature provide anything which was not already available in the American Institute's *Accountants' Index*? One advantage of the British publication is that material in languages other than English is included. The amount of such material seems rather limited, however: for example, no French or German works on consolidated accounts are listed.

A sampling of two major American authors provided a few surprises: Paton and Littleton's *An Introduction to Corporate Accounting Standards* is dated 1970 and Littleton's *Structure of Accounting Theory* 'c. 1973'; Littleton's *Essays on Accountancy* is there but not *Paton on Accounting*; Littleton at one

point becomes 'Littlejohn' (one wonders who to cast for Robin Hood).

Deciding what was of 'current interest' must have been a problem. It is pleasing to note that copies of the first printing (1937) of Bonbright's *Valuation of Property* are included in the 1971 volume; as is also, rather surprisingly, Florence Edler's *Glossary of Mediaeval Terms of Business: Italian Series, 1200-1600*.

All in all this is a very worthwhile publication and adds significantly to the bibliographic material available to accountants. The whole set is available to members of the English Institute for £28.

University of Exeter

R. H. Parker

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Contributors to Accounting and Business Research

Volume 7 No 27 Summer 1977

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Cash Flows and Realisable Values: the Intuitive Accounting Concepts? An Empirical Test*

D. P. Tweedie

Introduction

This paper reports on the results of a pilot study which sought to obtain insights into how people intuitively regard income and value measurement. In particular, the study tested whether the syntax of accounting was recognisable to those unskilled in the discipline by examining their methods of asset valuation and their allocation of costs and revenues to accounting periods.

The study was conducted for two related reasons. Firstly, recent research has indicated that a communications gap exists between private shareholders unskilled in accounting techniques and the accountant who reports to them on behalf of the management of the corporate enterprise.¹ Secondly, many eminent writers have hypothesised that financial reports are not couched in the language of the ordinary man and are apt to mislead him as well as to inform him. Two main areas of misunderstanding have been indicated. Writers such as Chambers,² MacNeal³ and Sterling⁴ have argued that people have natural perceptions of assets, liabilities and profits and are intuitively more

inclined to think in terms of current values rather than historic costs and consequently consider the balance sheet as a statement of values. Other writers such as Jaedicke and Sprouse⁵ and Thomas⁶ have concentrated on a different aspect of the problem and have suggested that the allocation of costs over several periods is alien to laymen who probably use cash basis accounting in making calculations about their own private affairs.

In essence, these writers are asserting that one of the major communication difficulties in financial reporting may be caused by the reporting accountant's inability to remember how he may initially have considered income and value measurement. An accountant trained to use professional techniques is quite likely to have forgotten, or to consider irrelevant, his initial way of perceiving the determination of profit and the valuation of assets now that he has learned another, more sophisticated, method. He is now likely to think habitually in terms of established accounting concepts.⁷

If the user of accounting reports does intuitively use different bases of measurement from the accountant, communication between the two will be extremely difficult. The accountant may assume that the user is familiar with the utilisation of both the accruals concept and historic cost statements. The user, on the other hand, unless he receives a clear warning to the contrary, is in danger of believing that accounting reports are based on concepts familiar to him. The study reported here sought to define more precisely these areas of possible misunderstanding in the reporting process. It examined the

¹See T. A. Lee and D. P. Tweedie, 'Accounting Information: An Investigation of Private Shareholder Usage', *Accounting and Business Research*, Autumn 1975, pp. 280-291; T. A. Lee and D. P. Tweedie, 'Accounting Information: An Investigation of Private Shareholder Understanding', *Accounting and Business Research*, Winter 1975, pp. 3-17; T. A. Lee and D. P. Tweedie, 'The Private Shareholder: His Sources of Financial Information and his Understanding of Reporting Practices', *Accounting and Business Research*, Autumn 1976, pp. 304-314; and T. A. Lee and D. P. Tweedie, *The Private Shareholder and the Corporate Report*, ICAEW, London, 1977.

²R. J. Chambers, *Accounting, Evaluation and Economic Behavior*, Prentice-Hall, 1966, pp. 78-123. See also R. J. Chambers, 'The Missing Link in Supervision of the Securities Market', *Abacus*, September 1969, p. 20 and R. J. Chambers, 'Evidence for a Market-Selling Price-Accounting System' in R. R. Sterling (ed), *Asset Valuation and Income Determination*, Scholars Book Co., Kansas, 1971, p. 79.

³K. MacNeal, *Truth in Accounting*, Scholars Book Co. (reprint), Kansas, 1970, pp. 1-19 and p. 323.

⁴R. R. Sterling, *Theory of the Measurement of Enterprise Income*, University of Kansas Press, 1970, pp. 117-189.

⁵R. K. Jaedicke and R. T. Sprouse, *Accounting Flows: Income, Funds and Cash*, Prentice-Hall, 1965, p. 37.

⁶A. L. Thomas, 'The Allocation Problem in Financial Accounting Theory', *Studies in Accounting Research No. 3*, American Accounting Association, 1969; and A. L. Thomas, 'The Allocation Problem: Part 2', *Studies in Accounting Research No. 9*, American Accounting Association, 1974.

⁷Even experienced academics occasionally find it difficult to break away from the practices they are condemning. See R. J. Chambers, 'Second Thoughts on Continuously Contemporary Accounting', *Abacus*, September 1970, p. 43.

relatively unproven assertions of the above writers⁸ by means of an empirical test designed to assess whether or not those unskilled in accounting may intuitively perceive income and value measurement in a manner different from that of the accountant.

The paper is divided into four further sections. The next section describes the nature of the study, the following two sections report on views on income measurement and asset valuation respectively, and finally, the results are summarised and conclusions drawn.

Methodology

The first stage in testing intuitive views on income and value determination was to select a group of individuals who were untrained in generally accepted accounting concepts yet interested in accounting information.

As a pilot study, a student group studying for degrees with an accounting component was chosen to ascertain whether or not there was any validity in the hypothesis that trained accountants and users of accounting information had different concepts of income and value measurement. Should the results of the pilot study show that the empirical evidence tended to support this hypothesis, then a major study would be undertaken using private shareholders inexperienced in accounting techniques (henceforth referred to as lay shareholders).

For the purposes of the study, a test was conducted in October 1974 and October 1975 using students at the Universities of Edinburgh and Liverpool attending their first accounting lecture. These students were reading business or economics-oriented degrees majoring in Commerce, Economics, Law or Accounting. The only important difference between the English and Scottish students was one of timing – in Liverpool, accounting is taught in the first year; in Edinburgh, students commence study of the subject in their second year.⁹

Students who had studied accounting previously (for example, at school) were eliminated from the analysis thereby providing an adequate assessment of students' invital views of accounting data.¹⁰ In all,

⁸Few of the above writers have produced empirical evidence to prove their point, though several have produced evidence to support their conclusions. See, for example, Chambers (1969) pp. 23–31, and Chambers (1971).

⁹No differences in views were noted between students in the two universities and between those entering the universities in different years.

¹⁰In a test of the answers of the few students who had been eliminated from the analysis described below, it was apparent that they considered the questionnaire to be an examination of their accounting prowess and utilised existing accounting concepts of income and value measurement.

the views of 214 students were analysed, 118 studying at Liverpool and the remaining 96 at Edinburgh. To avoid undue pressure on the student and to attempt to reduce the chances of collaboration among groups of students, the questionnaire was distributed at the commencement of the first accounting lecture with the qualification that the answers would not be used for assessment purposes and should be returned anonymously at the end of the lecture period.

Undergraduates, due to their age and lack of experience, could well, however, be more financially naïve than lay shareholders. To discover, therefore, whether the pilot test could be a guide to the views of private shareholders, it was decided to question both students and (later) shareholders about the contents of two of the major accounting statements. Consequently, therefore, test questions were introduced into the brief questionnaire given to each student. These questions examined, at a fairly fundamental level, students' knowledge of the contents of a profit and loss account and a balance sheet and enabled the students' answers to be compared with those of private shareholders, who were asked the same questions in a survey conducted in the summer of 1975.¹¹

The students' answers to the two questions are shown in Table 1.

The categorisation of individual answers into comprehension classifications is invariably somewhat arbitrary. The coding frames used to determine reasonable, vague and no comprehension of the contents of a profit and loss account and balance sheet were, however, identical for the surveys of both private shareholders and students and are

TABLE 1
Actual Understanding of the Nature of Individual Sections of the Annual Financial Report

<i>Level of Understanding</i>	<i>Profit and Loss Account</i>	<i>Balance Sheet</i>
	%	%
Reasonable	29	20
Vague	37	12
None	34	68
n = 214	100	100

¹¹See Lee and Tweedie (1977) chapters 4 and 9.

reproduced in Appendices 1 and 2 together with the students' responses.

Table 1 reveals that the students' level of knowledge of the contents of both of the financial statements was poor. While shareholders with no experience of accounting had a slightly better understanding of the balance sheet than the students, their knowledge of the contents of the profit and loss account was not so good.¹² Overall, however, the comprehension (or lack of it) of the two groups appeared to be similar. This was checked by giving each student and shareholder respondent two points for each 'reasonable' answer, and one point for each 'vague' answer. No points were given for answers revealing a lack of comprehension. The distributions of the scores of the two groups are shown in Table 2.

Table 2 confirms that the scores of the two groups were not dissimilar¹³ and suggests that, while the use of students in this pilot study may not be ideal, at least they appeared to have a similar degree of understanding of the contents of the basic accounting statements to that of the lay shareholders.

Income measurement

Following the two introductory questions on the contents of financial statements the students were

presented with a more demanding question (reproduced in Appendix 3) and were required to calculate a company's profit or loss for each year of a two year period.

The question was constructed to present the students with two major allocation problems caused by the purchase in year 1 of a machine with a ten year life, and expenditure in the same year on research and development which would benefit the company over the next five years. Three further problems confronted the students which, under present accounting conventions, necessitated the leading and lagging of cash flows due to the existence of stock (at the end of year 1) and the presence of debtors and creditors at the end of year 2. To ensure that the students did not obtain the impression that every transaction was fraught with difficulty, five 'dummy' transactions were included, all of which could be dealt with on a simple cash flow basis. The responses to the dummy transactions are not analysed here (students dealt with these on a cash flow basis without difficulty); interest instead is centred on the students' reaction to their first encounter with the accruals concept.

The responses of the students to the five key transactions are shown in Table 3.

The table shows clearly that the students used a cash flow treatment far more frequently than the accruals method.¹⁴ Only in one instance did the attempt to match revenue with expenditure oust the cash flow concept as the most popular choice. Looking at the data more closely it can be seen that different items were accorded different treatments and, in addition, due to the nature of the question, could not be given similar coding frames.

Expenditure on the machine and research and development

The treatment of these two items presented the students with the problem of deciding which year(s) should bear the expenditure. In the case of research and development two-thirds chose to write off the expenditure immediately. 15%, however, wrote off one-fifth of its expenditure in both year 1 and 2 (services were expected from this expenditure for five years) and a further 12% also expensed one-fifth of the expenditure in the first year and then omitted to use a similar treatment in year 2. 6% appeared to capitalise the expense but did not write off any of it against revenue. Despite being asked to state the reasons for their treatment of each transaction, few

TABLE 2
Comparison of the Understanding of
Students with that of Private Shareholders
without Accounting Experience

Score	Students	Shareholders
	%	%
4	10	9
3	9	16
2	25	22
1	31	33
0	25	20
	100	100
	n = 214	n = 178

¹²For a fuller description of an examination of the comprehension of this group with regard to the reporting process, see Lee and Tweedie (1977) chapter 9.

¹³The differences were significant only at the 30% level using a chi-square test. The differences in the scores between inexperienced shareholders and those with experience of accounting (not shown above) were significant at the 1% level. Almost three-quarters of the latter group scored 3 or 4 points.

¹⁴In the context of this question, 'cash flow' is defined as the actual cash transactions of the reporting entity, i.e. the movement of cash in and out of the entity.

TABLE 3
Accounting Concept used for Each Transaction

<i>Concept Used</i>	<i>Machine</i>	<i>Stock</i>	<i>Research and Development</i>	<i>Creditors</i>	<i>Debtors</i>
	%	%	%	%	%
Cash basis used	42	90	67	69	67
Accrual basis used correctly	28	3	15	25	27
Accrual basis used incorrectly	18	3	12	n/a	n/a
Item not written off	10	n/a	6	n/a	n/a
Other	1	2	—	1	1
No answer	1	2	—	5	5
n = 209*	100	100	100	100	100

* 5 respondents did not answer any part of this question and have been omitted from the analysis.

students responded to this request and, coupled with the anonymity of the questionnaire, it was, therefore, not possible to discover the rationale (if one existed) behind this technique.

Ten per cent of the students adopted a similar unexplained treatment when dealing with the transaction involving the machine. 46%, however, made an attempt to allocate the expense of the machine over its life, although 18% omitted to charge the correct proportion to year 2.¹⁵ Only 42% of the students used the cash basis in dealing with this transaction. It would seem that the concept of allocating depreciation is not entirely foreign to the student – possibly due to the emphasis in consumers' magazines on the depreciation of consumer durables such as motor vehicles.¹⁶

¹⁵All students who allocated (or attempted to allocate) the cost of the machine over its life used straight-line depreciation. The results tend to support Thomas' hypothesis that if laymen were to be asked the way to allocate the cost of a depreciable asset over its service life, a large proportion would recommend abandoning depreciation altogether and most of the remainder would recommend some form of straight-line depreciation. See Thomas (1969) pp. 102–103.

¹⁶The notion of depreciation is also familiar to private shareholders. On being asked the method used to value plant and machinery in the balance sheet, 70% of all shareholders (64% of shareholders with no experience of accounting) interviewed realised that the asset was valued at original cost less depreciation. See Lee and Tweedie (1977) chapters 4 and 9. See also Lee and Tweedie (Winter 1975) pp. 6–7 and p. 14.

Stock, creditors and debtors

The adjustments involving stock, creditors and debtors involved leading or lagging the cash flow in two adjacent years. In these cases the students faced a straight-forward choice: either an adjustment was to be made (accruals concept) or it was not (cash flow concept). To enable the students to make their own decisions about income determination the stock adjustment was deliberately not presented to the students in an obvious form. In addition, to avoid complicating the question, they were not informed whether the stock consisted of completed or partially completed goods. In analysing the answers, however, the few students (6%) who made an adjustment to the company's expenses (or in some cases added stock to its sales) considered the stock to be in the same state as it was purchased. Half of the students who did adjust for stock in year 1 omitted to re-adjust in year 2.

No re-adjustment was possible for creditors and debtors since these arose at the end of the second year. Only about one-quarter of the students made an adjustment to expenses and sales for creditors and debtors, respectively. The remainder were more concerned with showing the cash flow situation.

Overall use of the concepts

So far, we have been concerned with looking at the treatment of individual transactions. A further aspect worthy of consideration is the individual student's overall treatment of the five transactions.

This would reveal the particular measurement concept each student was using to derive his version of profit.

By considering incorrect attempts at the accrual system as a preference for that basis and by combining these answers with those correctly utilising the accruals concept it is possible to compare the use of this concept against that of cash flow. Table 4 reveals the results of this analysis.

The table shows that one-third of the students used the cash flow concept when dealing with each transaction whereas only one respondent used the accruals concept (not always correctly) on each occasion. 41% of the students never used the accruals concept, as opposed to only three students who failed to use the cash flow system for any transaction. In all, only 19% of the students used the accruals basis on a majority of occasions whereas 73% utilised the cash flow concept for at least three of the five transactions.

Many of the students who used the cash flow basis gave evidence of making a deliberate choice when omitting to incorporate the amount due to creditors and the revenue due from debtors by pointing out that the company had an extra 'profit' in year 3. (A surplus of £200 existed when accrued expenditure was deducted from accrued revenue.) In total, 24% of the students made this point. In addition, 7% revealed an awareness of the potentially distorting

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effect of cash flow reporting by noting the fact that while the machine had been charged to year 1 it had a further service potential of 9 years.

Students did not generally perceive matching adjustments as being in two distinct categories of (a) long term – service potential allocations over several years, and (b) short term – year end cash flow to operations flow adjustments.¹⁷ Forty-two students who allocated the cost of the machine over its service life did not identify research and development expenditure as being of a similar nature. The stock adjustment, as has been mentioned earlier, was only made by 6% of the students. These two items were almost entirely responsible for those few of the students using the accrual system for all five transactions. All but two of the respondents who used the accruals concept on four occasions omitted the stock adjustments. The two remaining students treated research and development on a cash flow basis. Similarly, among the 20 students who used the accruals concept on three occasions, 13 failed to adjust for stock and an identical number wrote off research and development at the time the expenditure was incurred.

While the accruals basis can be considered to be merely a modified form of cash flow seeking to portray the flow of operations,¹⁸ there is what Thomas¹⁹ would term an ambiguity in the allocation of cost to different periods. It is for this reason that Solomons²⁰ has declared that income measurement may be on the decline. (Indeed, Lee²¹ has suggested that, for many purposes, cash flow statements would be much more relevant to users of accounts.) The evidence from this pilot survey, if supported by evidence from a later shareholder survey, would seem to support the conclusions of Jaedicke and Sprouse and Thomas that the matching and realisation principles do not seem to be intuitive ways of regarding accounting data. It would seem that many lay users of accounts could possibly assume

TABLE 4
Overall Use of Accrual and Cash Flow Concepts

No. of Times Concept used	Accrual	Cash Flow
	%	%
5	1†	32
4	8	17
3	10	24
2	26	11
1	14	15
0	41	1
n = 209*	100	100

* 5 respondents did not answer any part of this question and have been omitted from the analysis.

† 1 respondent used the accrual concept for each of the five transactions.

¹⁷In one aspect the students were consistent: six students who accrued income at the end of year 2 failed to accrue expenditure. Two students who accrued expenditure failed to accrue income.

¹⁸See Sterling (1970) p. 266 and G. Whittington, 'Asset Valuation, Income Measurement and Accounting Income', *Accounting and Business Research*, Spring 1974, p. 99.

¹⁹Thomas (1969) p. 7.

²⁰D. Solomons, 'Economic and Accounting Concepts of Income', *Accounting Review*, July 1961, p. 383. Thomas (1969) p. 101 declared that it was time to consider 'the possibility of ultimate failure in our efforts to determine income' and suggested the substitution of net-quick-assets funds statements (allocation free) for income statements.

²¹T. A. Lee, 'A Case for Cash Flow Reporting', *Journal of Business Finance*, Summer 1972, pp. 27-36.

that the profit and loss account is constructed on a cash basis.²²

Asset valuation

The students, on the whole, appeared to consider profit to be a measure of liquidity and did not seem to adopt the Hicksian notion of income as a guide to consumption while maintaining capital intact. The key to capital maintenance is, of course, asset valuation. The 1975 shareholder survey, however, revealed that the accountant's present methods of asset valuation were largely not understood by inexperienced shareholders.²³

Part of the problem may well have arisen from the shareholders' intuitive ideas of value. A 'state of affairs' implies a 'position' and, since the balance sheet is presented as part of what is regarded as a package of financial information, the state shown is, therefore, a 'financial position'. To Chambers this automatically implies valuation at realisable values.²⁴ Sterling shares this viewpoint:

A transmitter must make a judgment about how these receivers think. The question in its simplest form is 'Do they think in terms of (a) unexpired costs, (b) constants, (c) discounted expectations, or (d) present market prices?'

In a market economy the answer should be obvious. Every housewife . . . knows that the family automobile is 'worth more' to her than its current sale price but that the sale price is available to meet emergencies. She also knows that the sale price of the automobile could be used to purchase that coveted fur coat; but in order to know this she must know the present, not the past or future, price of both the coat and automobile. On the other hand, the notions of unexpired costs are arcane, even to the businessman who has incurred those costs. The author has never met a businessman who fully understood or accepted the accountant's methodology.²⁵

The truth of these statements is, however, relatively untested, empirically. Do people think in terms

of realisable values? To examine this hypothesis, the students were presented with a second major question²⁶ (deliberately unconnected with the first), which asked them to draft a statement giving shareholders a clear picture (in numerical terms) of a company's financial position.

Fixed assets

The question was primarily concerned with four fixed assets and data were given showing estimated service life, historic cost, current entry values and current exit values for each asset.

Due partly to the time taken by some students to answer the income measurement question, and also possibly to the complexity of the asset valuation question, 36% made no attempt to show the company's financial position and have been omitted from the analysis. The responses of the remaining students are shown in Table 5.

The evidence tends to support very strongly the hypothesis propounded by Chambers, MacNeal and Sterling. Over 60% of the students answering the question opted for a presentation showing realisable values for each of the four assets shown. Indeed, 58% consistently used exit values to describe the company's financial position and valued each of the four assets at their realisable values.²⁷ Additionally, 11% gave a combination of original cost, current entry and current exit values for each asset. In all, therefore, 69% of the students appeared to believe that exit values were important in portraying a company's financial position.²⁸

Bases other than exit values were used by only a small proportion of the students answering the question. Historic cost was used consistently by only 16%, though, by including those who showed cost with the current values, 27% appeared to believe that original costs should be given in a statement of financial position.

Less than one-fifth of the students answering the question consistently seemed to feel that replacement cost was a useful piece of information. No students

²²It was interesting to note in the 1975 shareholder survey, that 73% of the respondents who had no experience of accounting did not understand the meaning of the term 'accrued charges' appearing in their company's balance sheet. See Lee and Tweedie (1977) chapter 9.

²³Of these lay shareholders, 70% could not value stock correctly and 80% failed to give the present valuation method for quoted investments.

²⁴Chambers (1970) p. 49.

²⁵Sterling (1970) p. 314. See also MacNeal (1970) p. 84 who states that financial statements purport to deal with present economic values and are extremely apt to be mischievous to the extent that they do not do so.

²⁶See Appendix 4.

²⁷On occasion this valuation was combined with other valuation bases. 37% consistently used realisable values without showing any other valuation. Historic cost was shown independently by only three students. Replacement cost was shown to the exclusion of all other valuation bases by merely one student. There are, of course, problems in the definition of realisable values, e.g. going concern or liquidation values. The students were not asked about this aspect of the valuation problem.

²⁸No student consistently opted for the highest, lowest or an intermediate value for each asset. The decline in the numbers selecting realisable values (Table 5) was due to the rise in the number of 'no answers'.

TABLE 5
Valuation Concept Used to Determine Financial Position – Fixed Assets

<i>Concept Used</i>	<i>Factory Building</i>	<i>Office Building</i>	<i>Factory Machinery</i>	<i>Office Equipment</i>	<i>All Items</i>
	%	%	%	%	%
Realisable value	67	66	64	61	58
Historic cost + replacement cost + realisable value	19	18	15	11	11
Replacement cost	17	10	9	10	7
Historic cost	12	12	12	12	12
Historic cost less depreciation	5	4	4	4	4
Other	7	7	7	7	28
No answer	—	6	12	15	—
n = 138 *	127 †	123 †	123 †	120 †	120

* 76 respondents failed to answer any part of this question and have been omitted from the analysis.

† The numbers of respondents who gave multiple answers to a part of the question are shown below:

Factory building — 36
 Office building — 32
 Factory machinery — 30
 Office equipment — 28

opted for depreciated replacement cost – the most likely accounting valuation basis in the future if the proposals of the Sandilands Report are implemented.²⁹ Indeed, despite the willingness of many students to depreciate the machine in response to the first major question, only 4% made any attempt to show a depreciated value (depreciated historic cost) in presenting a company's financial position.³⁰

Stock

The students' valuation methods were tested on only one current asset. Appendix 4 shows that details of stock movements were also presented to

the students. In this instance replacement cost and realisable value were equated but the students who preferred an historic cost valuation were faced with the choice of using one of the several methods of costing stock flow at present in use.³¹ The analysis of the students' answers is presented in Table 6.

The table shows that once again historic cost was decisively rejected in favour of a current valuation. Indeed, 86% of those who answered this part of the question appeared to believe that some current valuation method was more informative than original cost in showing financial position.

Those who had used a current valuation method for fixed asset valuation tended to use a similar method for the current asset. 84% of those who used realisable values, and 60% of those who used replacement cost to value fixed assets, used a current price valuation for stock.³²

²⁹*Inflation Accounting: Report of the Inflation Accounting Committee*, Cmd. 6225, HMSO, London, 1975. For a discussion of the potential difficulties faced by readers of accounts based on the Sandilands recommendations see T. A. Lee, 'Sandilands and User Comprehension', *Journal of Business Finance and Accounting*, Spring 1976, pp. 85-95.

³⁰There appeared to be no major difference between an individual's choice of the accruals or cash flow concept for income determination and his choice of realisable values to present financial position. For example, of those who used the cash flow concept for at least four of the five transactions, 28% used realisable values alone to show financial position. 22% of those who used the accruals concept on at least four occasions used exit values to show the company's financial position.

³¹Two current values were not given to avoid causing too much confusion. For this asset a test was also being made on the students' views on present stock valuation methods.

³²These figures exclude those who showed all three values (realisable value, replacement cost and historic cost) in the presentation of the valuation of the fixed assets.

TABLE 6
Valuation Concept Used to Determine
Financial Position – Stock

<i>Concept Used</i>	<i>%</i>
Current value	69
Historic cost – withdrawal ignored	10
Historic cost – simple average	3
Historic cost – first in, first out	3
Historic cost – last in, first out	—
Other	4
No answer	20
<i>n = 138*</i>	109†

* 76 respondents failed to answer any part of this question and have been omitted from the analysis.

† 13 respondents used two valuation bases in response to this part of the question.

So few of the students used an original cost basis it was not possible to assess their use of present methods of stock valuation. In general, those who used historic cost to value fixed assets were consistent in their valuation of the current asset. 52% used the same basis to value stock.³³

Summary and conclusions

This paper described the first stage of a study designed to examine the layman's intuitive views about income and value measurement. The objective of this particular stage of the examination was to test the assertions of several accounting theorists that the layman does not think in terms of either historic cost or the allocation of revenues and expenses to accounting periods but, instead, assesses value and income in terms of current realisable values and cash flows, respectively.

The evidence from this pilot study, using students who had no experience of accounting, only gives a guide to the likely views of the inexperienced private shareholder. (Questions are being developed and are to be used on shareholders in a more detailed study.)

The results, however, do give an insight into reasons why the report user may misinterpret accounting statements. Considering firstly income measurement concepts, it was clear that a large proportion of the students did not appear to think in terms of the matching and realisation concepts. In four of the five transactions tested, a considerable majority used the cash flow concept. The present and proposed (Sandilands) methods of fixed asset valuation also found little favour with the respondents. A large majority of those valuing fixed assets used an exit value basis.

These results are, however, subject to two important caveats. Firstly, there would appear to be an apparent contradiction between a preference for cash flow reporting combined with support for recording assets in the balance sheet; e.g. most students would apparently write off the asset in the cash flow statement yet record it at realisable value in the balance sheet. For certain decisions, cash flow and exit value statements would appear to be invaluable. It is, however, possible that the simplification of presenting income measurement and asset valuation as two separate problems (which had been done in this case to avoid confusing the students with a mass of data) may have influenced the results. The more detailed study will present respondents with a single problem involving both the calculation of profit and the presentation of a company's state of affairs. This, it is hoped, will provide a check on whether laymen do think in terms of the articulation between income and value or whether (as appeared likely from this study) they think of profit and financial position as separate concepts. Secondly, in the main study, the respondents will be interviewed to ensure that there is a genuine preference for a cash-flow system and that the results reported in this paper did not arise mainly because of the technical difficulty of implementing an accruals system.

If, however, the results described in the preceding sections are replicated by the full study, then they will have serious implications for the present methods of financial reporting. It is possible that many shareholders may hold similar views to the students and consider financial position in terms of realisable values and not in terms of unexpired service potential, using either original cost or current entry values. Yet no provision is being made at the moment to present shareholders with exit value information.³⁴ Such information is by no means irrelevant. It gives the reader data on the potential adaptability of the company and its command over goods. It would help

³³This figure excludes those who showed all three values in the presentation of the valuation of fixed assets. 19% of those valuing fixed assets at historic cost did not answer this part of the question.

³⁴Report of the Inflation Accounting Committee (1975) pp. 153–155, rejects a realisable value system.

the investor to compare the asset worth of different companies and to ensure he was in possession of this vital information in a take-over situation. Additionally, assets valued at their realisable values would be extremely useful to creditors anxious about a company's solvency.

Creditors would also be assisted by cash flow information which, together with realisable values, could obviate the need for the subjective allocation of expenditure and revenue at present bedevilling income measurement. Income measurement is used both for stewardship and for predictive purposes. Given the empirical (though admittedly conflicting) evidence on the predicability of income³⁵ there may well be a case for a 'do-it-yourself' form of income determination by presenting the user of accounts with detailed cash flow statements (such as those suggested by Lee),³⁶ and allowing him to make his own allocative judgments if he so wishes.

It is unlikely, however, that the profession would at present be prepared to go so far as to scrap income measurement in its existing form and to replace the prospective use of (basically) replacement cost by realisable values, nor would I recommend that it should do so. Indeed, the pursuit of a single valuation may well be mistaken since many decisions tend to be based upon a comparison of values.³⁷ There is a case, however, for the provision of cash flow and realisable value statements together with the type of statements proposed by the Sandilands committee. To avoid the possibility of confronting the perplexed reader of the accounts with a mass of figures, however, a *clear and simple* guide to the statements and a (mainly verbal) summary of their major implications should be included in the corporate financial report. At present, it would seem that accounting has possibly moved far from the financial logic of the layman who, on the basis of this study, may not normally think in terms of historic cost, replacement cost or the accruals concept. It is difficult for the accountant with his trained mind to think again in what to him may be naive terms. Yet if he is

unwilling to include the suggested statements in the corporate report he may well (if the major study gives similar results to this pilot) have to be prepared to consider the need to indicate to users of financial reports the difference between his methods of accounting and their own. He should contrast his methods of allocating income and expenditure with that habitually used by the layman and should emphasise the fact that the balance sheet does not reveal what the layman would consider to be the company's financial position. If he does not do this then it is likely that the layman will draw a different interpretation from the accounts than that intended by the reporting accountant and the communications gap between them will remain.

Finally, given that this research was conducted within an educational setting, these results obviously have implications for teachers of accounting. On the basis of this study, it cannot be assumed that accrual accounting and the resulting asset valuations at unexpired original or replacement cost (in the post-Sandilands era) merely require the student to make no change or even only a slight adjustment to his intuitive ideas about accounting. It would appear that what is demanded from him is a major change in his thinking about the subject.

Accrual accounting is, in essence, an adaptation of cash flow concentrating mainly on realised cash flow and therefore on completed transactions. To assist the student to appreciate the differences between his intuitive (simple cash flow and exit values) and the professionally acceptable concepts of income and value measurement (adjusted cash flows and unexpired costs), the teacher, like the professional accountant reporting to the shareholder, may have a two-fold task. First, he should make a direct contrast between the two systems and secondly he should explain carefully the logic behind the currently acceptable concepts. In this way, the student should rapidly become aware of the differences between his initial ideas about accounting and the measurement techniques presently in use. He should, therefore, be better equipped to assimilate the concepts which, apparently, at present may well be familiar only to trained accountants.

Acknowledgement

I am indebted to Professor Lee (formerly of Liverpool University) and to his staff for their assistance with this project. I am also grateful to colleagues at Edinburgh and Bristol Universities for their criticisms of an earlier draft of this paper.

³⁵See G. Whittington, *The Prediction of Profitability and Other Studies of Company Behaviour*, Cambridge University Press, 1971, pp. 82-104; A. Singh and G. Whittington, *Growth, Profitability and Valuation*, Cambridge University Press, 1968, pp. 133-134; C. Jones, D. P. Tweedie, and G. Whittington, 'The Regression Portfolio. A Statistical Investigation of a Relative Decline Model', *Journal of Business Finance and Accounting*, Summer 1976, pp. 71-92; and A. C. Rayner and I. M. D. Little, *Higgledy Piggledy Growth Again*, Basil Blackwell, 1966, pp. 76-81.

³⁶Lee (1972) pp. 32-36.

³⁷See Whittington (1974) especially pp. 96-98. See also *A Statement of Basic Accounting Theory*, American Accounting Association, 1966, pp. 22-23.

APPENDIX 1**Actual Understanding of Contents of Profit and Loss Account**

	%
Contents of profit and loss account stated to include:	
sales or turnover	7
reserves and expenses	14
trading expenses	11
expenses required (by statute) to be disclosed	2
profit or trading results	21
trading profit and expenses required (by statute) to be disclosed (†)	1
profit or sales and trading expenses (†)	30
dividends and/or profit retentions	1
Other answers (almost entirely incorrect answers)	41
'Do not knows' and 'no answers'	14
<hr/>	
n = 214	142 *

* 90 respondents (42% of 214) gave more than one content item.

Note

For purposes of Table 1, all of the above-mentioned specific items (and two of the 'other' answers) were classified as correct. *Reasonable understanding* was attributed to those respondents who mentioned either item marked (†) or who gave two of the other correct items provided that no incorrect answer had been given. *Vague understanding* was attributed to those respondents who either gave only one correct item or who gave two correct and one incorrect item. The remaining respondents were classified as having *no understanding*.

APPENDIX 2**Actual Understanding of Contents of the Balance Sheet**

	%
Contents of the balance sheet stated to include:	
assets only	11
liabilities and/or share capital only	2
assets and liabilities (†)	27
assets, liabilities and net worth (†)	4
Obviously incorrect answers	68
'Do not knows' and 'no answers'	12
<hr/>	
n = 214	124 *

* 51 respondents (24% of 214) gave two content items.

Note

For the purposes of Table 1, all of the above-mentioned specific items were classified as correct answers. *Reasonable understanding* was attributed to those respondents who mentioned either of the items marked (†) provided no incorrect answer was also given. *Vague understanding* was attributed to those respondents who gave either one of the other specific items (with no incorrect answer mentioned) or who gave two correct and one incorrect answer. The remaining respondents were classified as having *no understanding*.

APPENDIX 3**Question Assessing Income Measurement Concepts**

The following information relates to the first two years of the XYZ company's life. The company purchases crudely finished toys from A Ltd., uses its skilled craftsmen to complete the toys and then sells the completed goods to toyshops.

You are required to show what you consider to be the company's profit or loss for each of the two years, showing all details of all costs and income.

Please indicate briefly the reasons for your selection of each figure.

Year 1

- * 1. The company bought a machine with a 10 year life for £10,000.
- 2. It bought 2,000 partly constructed toys from A Ltd. at £1 each for £2,000.
- 3. It paid its craftsmen a total of £4,000.
- * 4. It sold 1,800 completed toys (at £5 each) for £9,000 cash.
- * 5. It spent £5,000 on research and development of new lines of toys, expected to be popular in the next 5 years.

Year 2

- 6. The company bought 1,500 partly constructed toys from A Ltd. at £2 each for £3,000.
- * 7. The company received a further 500 partly constructed toys from A Ltd. at £2 each and promised to pay A Ltd. the outstanding £1,000 in year 3.
- 8. It paid its craftsmen a total of £5,000.
- 9. It sold 2,000 completed toys (at £6 each) for £12,000 cash.
- *10. It sold a further 200 completed toys for £1,200. The customer did not pay cash but promised to pay the amount owing (£1,200) in the following year (year 3).

* Transactions included in analysis in Tables 3 and 4.

APPENDIX 4**Question Assessing Valuation Bases**

The following information is known about a company. Please draft a statement giving the company's shareholders a clear picture (in numerical terms) of its financial position as at 1974.

Please indicate briefly the reasons for your selection of each figure.

Factory building

The factory building was purchased by the company in 1964 for £60,000 and at that time it had an expected life of 30 years. In 1974 it would cost £130,000 to replace the existing factory which could be sold for £80,000.

Office buildings

The office buildings were purchased by the company in 1970 for £40,000 and at that time they had an expected life of 40 years. In 1974 it would cost £80,000 to build similar office premises nearby. Due to the value of the existing office site, the present buildings could be sold for £90,000 in 1974.

Factory machinery

The factory machinery was purchased in 1964 for £25,000 and had an estimated life of 25 years. In 1974 due to the introduction of new lightweight machines, new machines doing a similar job could be purchased for £14,000. Due to the value of the metal used in the old machines they could be sold in 1974 for £17,000.

Office equipment

The office equipment consists of electronic equipment with a 20 year life purchased in 1970 for £100,000. The same electronic devices would cost £150,000 in 1974 and the sale value of the now slightly obsolete 1970 equipment in 1974 was £70,000.

Stock

The stock of raw materials consists of 100 tons of cement. This amount is all that remains out of two consignments of cement received during 1974 each of which consisted of 100 tons e.g.

Consignment A	100 tons at £6 per ton	£600
Consignment B	100 tons at £10 per ton	£1,000
Used —	100 tons	

The remaining 100 tons could be sold on the open market for the present market price of £15 per ton i.e. for a total of £1,500.

The rate of inflation during 1974 was 10%.

A Price Parity Theory of Translation

Dennis H. Patz

In 1973, after noting in particular the shortcomings of the conversion orientation inherent in most translation approaches and the inconsistencies such an orientation implies, the American Accounting Association's Committee on International Accounting concluded that 'an alternative theoretical basis must be found for currency translation in order to develop new accounting principles for financial statements of multinational enterprises'.¹ The 1974 Committee continued in a similar vein, describing the translation issue as critical. This time concentration was on the frailties of various available exchange rates as translation factors, and they asserted 'that none provide reliable estimates of foreign resource values or of exchange rate gains and losses'.² This committee, too, asked for an alternative, but went further, suggesting a purchasing power parity approach as meriting 'extensive investigation as a possible translation mechanism for most foreign held resources'.³

In the 1975 Committee Report the same theme of overall dissatisfaction persisted and was explicitly stated, even though their charge was to respond to the FASB position on translation:

Although it might not be an impossibility, no one has yet suggested a satisfactory translation method that would compensate for differences in relative prices. Thus, even if all the difficulties suggested in the discussion memorandum are surmounted, translated financial statements will still provide only limited accounting representation of economic reality.⁴

¹Committee on International Accounting, American Accounting Association, *Report of the Committee on International Accounting*, Supplement to *The Accounting Review*, 1973, p. 151.

²Committee on International Accounting, American Accounting Association, *Report of the Committee on International Accounting*, Supplement to *The Accounting Review*, 1974, p. 262.

³*ibid.*

⁴Committee on International Accounting, American Accounting Association, *Report of the Committee on International Accounting*, Supplement to *The Accounting Review*, 1975, p. 91.

This paper is a response to the urgings above. The paper's purposes are two: first, to present an explicitly stated analysis of the translation problem, which by itself seems lacking in the literature, and, second, to interpret the results of this analysis in terms of fundamental concepts which provide a foundation for a price parity theory of translation. The perspective adopted in the paper is American, since this is the one with which the writer is presently most comfortable. Nevertheless, UK accounting principles and translation approaches may be substituted freely for their US counterparts and the analysis remains unchanged.

Meeting the first purpose accounts for the bulk of the paper and must if any useful dialogue regarding the theory is to follow. The general lack of explicitly stated assumptions, concepts and sequences of reasoning underlying present approaches has been one of the greatest stumbling-blocks to resolution of the translation issue. The second purpose is accomplished by way of contrast with traditional translation theory though this approach has its recognisable shortcomings. The contrast must rest upon interpretation of what constitutes conventional translation theory, interpretation which cannot be fully supported within the confines of a single paper. Nevertheless, to justify an alternative it must be demonstrated that such alternative appears preferable to what exists. To do this we must turn to differences.

Nature of the translation problem

Definition of the translation problem

That consolidation is a primary use of translated financial statements is taken as a given. Hence, hereafter the translation problem is considered to consist of translating foreign accounts *and* consolidating those accounts with domestic accounts.

Source of the translation problem

It is also taken as a given that the source of the translation problem is the need for homogeneity of measurement unit in consolidation (even without consolidation, the need for a familiar unit can be

presumed). Thus, unlike Parkinson,⁵ we reject out of hand any propositions that the accounts, pre-translation, could be permitted to materially differ in other quantitative respects (e.g. attributes measured, principles surrogated, broad pervasive or operating principles followed) and still preserve the prospect of rational combination and interpretation. As to qualitative differences which also might exist to frustrate combination (e.g. enterprise risk, environmental restrictions, different credit policies and customs), these are deemed more amenable to reconciliation via disclosure techniques rather than mechanistic translation techniques. Hence, the source of the translation is here viewed as (exclusively) the quantitative difference of heterogeneity in the measurement units used to develop two (or more) sets of accounting measurements in any translation-consolidation example.

A hypothetical translation example

To facilitate analysis of the accounting translation problem, it is desirable to start with a non-accounting example. Given the source of the accounting translation problem as heterogeneity in the units used to take accounting measurements in different places, it can be seen that the translation problem is not totally unique. As a result, it is possible to create and draw upon an example of a 'translation problem' that is simpler than the problem actually faced and yet contains the basic elements common to all heterogeneity of units problems of which the translation problem is one.

Assume that measurements of the height of selected individuals were taken, some in the USA and some in Europe, and as a matter of course were expressed in yards and metres respectively. Assume further that the same rules were followed in both locations for taking the measurements and that the rules followed were that all measurements were to be taken while the subjects were standing and all subjects were to be 45 years old at the time of measurement. This constitutes a translation problem if the measurements are to be used to gain information. Whether the measurements taken in the example are to be used or reported in the USA or in Europe, and whether they are going to be used as separate or combined sets of measurements, a translation problem exists. Even if the sets are not to be combined (consolidated), it can be presumed that a common frame of reference would be required

to make the information of greatest use. If the sets of measures are to be combined, of course, the problem of heterogeneity in the measurement units exists and must be confronted.

Solution to the above translation problem is not difficult. Reference to any dictionary will provide the translation rates required. If a dictionary or other reference work is not available but the measuring instruments are, say a yardstick and a metre stick, one could be laid upon the other and from the ratio indicated the needed translation rate calculated. Either way, an appropriate translation rate would be obtained which could then be applied to either set of measurements in order to restate them in the unit of measure of the other set. After restatement the translated numbers could be added to and subtracted from the unrestated numbers, and otherwise manipulated to extract the desired information from the measurements. The approach to solution followed above is not only commonplace but the logical approach in dealing with heterogeneity of units problems.

Definition of translation

Drawing upon the above example a tentative definition of translation may be advanced and given substantive meaning.⁶ Translation in general terms is a mathematical process of transforming measurements taken in terms of one scale of measurement into a second scale of measurement. Extending this definition to accounting, accounting translation is (should be) the mathematical process of transforming accounting measures scaled in foreign currency units of measure to accounting measures scaled in domestic currency units. This translation is a restatement process, not a measurement process. Measurement processes constitute a different and separable category of operations entirely.

While measurement involves mathematical operations, translation is a mathematical operation. The extent of the operation is defined by the circumstances. Translation does not create new relationships and states, it contends with existing ones. Measurement, on the other hand, defines its own circumstances. It creates new relationships and states. Measurement can involve a point of view, it

⁶For the present it is asked that the hypothetical problem be accepted as equivalent to the specific accounting translation problem to the extent required to allow definition of translation therefrom. Later it is shown that the height measurement problem and the accounting problem differ only with respect to the unit of measure involved in each. The gap in logic will be filled when price level adjustment and the problem and solution in the hypothetical example are related since the former *does* involve monetary units of measure.

⁵R. MacDonald Parkinson, *Translation of Foreign Currencies* (Canadian Institute of Chartered Accountants, Accounting and Auditing Research Committee Research Study) (Toronto: CICA, 1972) p. 14.

can give preference to certain ends over others, it is more than simply a mathematical operation. It is a creator, not a converter, of information. Translation, in contrast, is a mathematical operation only and so is as neutral with respect to information content as are the mathematical computations it involves. There is advantage in this neutrality.

The neutrality of translation can be seen in the translation example given and can be directly related to accounting translation as here conceived. The translation effected in the example involved no bias towards one location over the other. It was purely a mathematical exercise. There was no subjective judgement inherent in the process that the European measurements were in some way 'better' or 'worse' than those in the USA or in some way more or less important. Translation itself has no point of view. True translation when applied to foreign accounts must result in treating foreign operations as separate going concerns. Having or encompassing no particular point of view, translation must treat all measurements as having equal status. Since accounting is, in separate application, treatment of the firms as separate viable entities true translation will not alter this state.

The translation effected in the example can also be seen as neutral with regard to future events. There is no presumption, for example, that the subjects measured will quickly grow or shrink or that the Europeans will immigrate to the United States and through 'better' nutrition or 'worse' pollution quickly change their stature. By the same token, true translation applied in accounting must by definition be neutral with regard to future events and future actions of the firm; financial position must be considered independent of future expectations. Lack of neutrality in the present sense can be said to be a primary factor causing traditional translation methods to be unsatisfactory.⁷ Neutrality, as Chambers points out, 'is the property by virtue of which a statement, singular or aggregative, is relevant to whatever ends

are selected by the actor for consideration'.⁸ True accounting translation must possess neutrality in the sense above and therefore be relevant to whatever ends are selected by the multinational enterprise.

The example also points to another element of neutrality inherent in true translation. In the example it was irrelevant that the measurements were of height *standing*. Perhaps a more useful measure is height *sitting*. For that matter, measurements of the height of individuals standing may be considered by almost everyone as totally useless information. The point is that none of these areas of debate was entertained in the example translation problem. As a practical matter we might argue that any theory of translation should not take on the task of changing GAAP but, rather, should accept the accounting principles deemed sufficient at present as given. Since true translation is neutral, this argument becomes redundant. As Lorensen points out, these are separate questions entirely.⁹ Translation is neutral with regard to alternative measurement systems and the like and there is great advantage in this neutrality. A translation methodology which is truly translation is applicable to all accounting measurement systems, past, present, proposed or yet to be proposed.¹⁰

Elements of the translation problem

The definition of translation adopted above states that the translation is a mathematical process. Consolidation itself is simply an additional arithmetic operation – addition. For that matter much subsequent use of the quantitative information provided by translation and consolidation also reduces to applying additional mathematical operations, e.g. calculation and reporting of earnings per share and other ratios or analysis by way of calculating sub-totals, ratios, rates of return and the like. What evolves from an analysis of translation, then, is a concept of a metrics problem.

⁷These methods, in the USA or UK, can be viewed as having two common antecedents to their development – perception of translation as a measurement process and willingness to project the occurrence of future events and transactions so as to make measurement possible. This latter willingness to speculate on the future is discernible in the assumptions, stated or unstated, which are required to make logical most theoretical arguments offered on behalf of present methods. In particular, future remittances, the relative permanence of exchange rate levels and often the magnitude and timing of future foreign currency cash flows must be assumed. For the development of this view see Dennis H. Patz, *A General Theory for the Translation and Consolidation of Foreign Accounts*, unpublished doctoral dissertation, University of Texas, January 1975.

⁸Raymond J. Chambers, *Accounting, Evaluation and Economic Behavior* (Englewood Cliffs: Prentice-Hall, 1966) p. 164.

⁹Leonard Lorensen, *Reporting Foreign Operations of US Companies in US Dollars* (Accounting Research Study No. 12) (New York: AICPA, 1972) p. 33.

¹⁰This should not be construed as meaning that optimality in terms of information must result in all cases. For example, movement to a current cash equivalents measurement system might well suggest *measurement* of exchange value since the Chambers system is oriented toward providing information on currently available alternatives. *Restatement* (pure translation) would result in translated measures related to only a subset of all currently available alternatives, only those available in the economy where resources are presently located.

This is actually what the translation problem reduces to – a metrics problem. To see this it helps to recognize that in substance the translation problem and the price level problem can be viewed as almost identical and as constituting two parts which make up a larger heterogeneity of units problem that exists when foreign operations are involved: 'In both situations the objective is to achieve homogeneity in the units which are employed to measure the results of business operations and the resulting financial position.'¹¹

Because, conceptually, the two problems can be viewed as being quite similar, a conceptual foundation for identifying the substantive elements of the translation problem need not be invented. It is available in the literature which deals with price level adjustment at the conceptual level. In particular, Sterling and Chambers have clearly specified both the nature of heterogeneity of units problems and their solution in an accounting context. For example, Sterling¹² describes the price-level problem as one where, over time, the size of the accounting unit of measure can change with respect to the property which it expresses and the property which is possessed by the objects and events accounting measures. The result is heterogeneity in the units of measure, which, if not corrected, prohibits the comparison and the addition of units and thus the equation of two objects. A metrics problem exists. In the context of the translation problem, consolidation constitutes addition of measurements a and b with respect to property p on an account by account basis. To constitute a combined measurement in conformance with the rules of addition, the combined measurement must have 'the same property in the same measure as the sum of the individual measures of a and b ; that is $m(a) + m(b) = m(a+b)$ '.¹³

Sterling also specifies the general solution to heterogeneity of units problems. It is necessary to 'compare the existing units at both instants to the (an) invariant unit and express them as a ratio'.¹⁴ This ratio may be variously referred to as a 'similarity transformation', 'a constant coefficient' or as a 'transformation function'.¹⁵ The term 'translation

rate' is equally appropriate and particularly appropriate in this paper. Once the translation rate is discovered, in price level adjustment, it is then applied to measurements of one time dimension to transform them into measurements of a second time dimension. Taken together, the steps constitute a rule relating the time dimensions of the measurement units.

Chambers expresses an equivalent perception of heterogeneity of units problems and their solution. This perception seems fully captured in the following three arguments from his study:

Measurement is the assignment of numbers to objects according to rules specifying the property to be measured, the scale to be used, and the dimensions of the unit.

The scale of numbers of monetary units of given dimension is the scale of cardinal numbers; it is a ratio scale.

Measurement made on a ratio scale of stipulated unit dimension may be transformed into measurements of a different unit dimension by the rule relating the two dimensions.¹⁶

The basic elements of heterogeneity of units problems and their solution as described by Sterling and Chambers can clearly be seen in the prior height measurement example. There was measurement by way of assignment of numbers to objects. Rules specifying the property to be measured (height/distance), a scale of numbers (the ratio scale of cardinal numbers) and given dimensions for each unit can be seen in the example. Since measurements in physical scales are invariant through time, heterogeneity of units in the hypothetical example did not exist with respect to the time dimension of the measuring unit, as in the price level problem. Instead, the difference existed with respect to what may be described as the place dimension of the measuring unit. Nonetheless, the two situations are fundamentally the same. The units in the example differed in size with regard to the property they expressed, height, which was possessed by the European and US subjects alike.

Since the elements in the example problem correspond to the Sterling-Chambers description, as expected, the solution in the example follows the general solution they describe. The second solution presented in the hypothetical example illustrates this point best. Had the desired direction of translation been toward the US unit, the metre stick would have been laid upon the yardstick and would indicate a ratio of 1.093:1. Of course, both units involved are invariant so in the hypothetical translation example

¹¹Samuel R. Hepworth, *Reporting Foreign Operations*, (Michigan Business Studies, vol 12, no. 5) (Ann Arbor: University of Michigan, 1956) p. 203.

¹²Robert R. Sterling, *Theory of the Measurement of Enterprise Income*, (Lawrence: University Press of Kansas, 1970) pp. 332 and 333.

¹³Chambers, p. 90.

¹⁴Sterling, p. 334.

¹⁵The resulting relationship is called, in metrics theory, a "transformation function". For example, the transformation function of yards to feet is the numeral "three"; from inches to centimeters "2.54" etc.' *ibid*, p. 77.

¹⁶Chambers, Arguments 4.31, 4.34 and 4.38, pp. 101-102.

no reference to a third unit is required. The transformation function, translation rate, was directly calculable whereas in the price level problem a third unit of measure, goods, must be referenced. The last step in the solution to the example translation problem also corresponds to the last step in the general solution described by Sterling and Chambers: namely, multiplication of the European measures by the translation rate to achieve homogeneity in terms of the US unit of measure – restatement with respect to equivalence to the US unit in the place dimension.

Summary

Analysis of the translation problem leads to the conclusion that the accounting translation problem is a metrics problem. The source of the problem is heterogeneity in the units of measure used and so places the translation problem within a general class of problems. To that general class of problems there exists a general mathematical solution. This general solution can be seen operating in solution to problems involving units from the physical sciences as in the height measurement example presented. It can be seen operating in the solution to the price level adjustment problem as well.

The height measurement problem posed encompassed all elements of the accounting translation problem but one. That problem did not involve monetary units of measure. On the other hand, the price level adjustment problem does involve monetary units so between the two all elements of the translation problem are encompassed (see footnote 9). The conclusion follows that the general solution to heterogeneity of units problems is equally applicable to the translation problem.

In its simplest terms, the general solution consists of mathematically relating two differing units with regard to the property they express in order to form a ratio or rate which equilibrates the two units at an instant in time. Placing the solution in the specific context of translating foreign accounts, the key to specifying the form of the mathematical process of translation is identifying the property expressed by the accounting unit of measure.

Monetary units

Unit of money vs. unit of measure

The US dollar is both a unit of money and a unit of measure. The same holds true for the British pound, the German mark, the Mexican peso and so on; each is used to refer to both 'the *unit of money* in a country and to the *unit of measure* in financial

statements of companies in that country'.¹⁷ In fact, it is because the dollar, the pound and so on are units of money that any reason exists for their use as units of measure in accounting.

'Money is a commodity that can be owned and can be traded for other goods and services.'¹⁸ Because money as a commodity is accepted in exchange for any and all goods and services in an economy, it serves the useful purpose of being a medium of exchange. In turn, 'the use of money as a medium of exchange makes the monetary unit an appropriate unit of calculation in respect of all actual and prospective operations in markets.'¹⁹

As Sterling points out: 'One requirement of a unit is that it "possess" the same dimension as the object [measured].'²⁰ All 'objects' exchanged in an economy at one time or another possess a money price or money value in terms of the unit of money in that economy. For this reason units of money may reasonably be used as units of measure to 'perform the function of generalising the relationship of objects to objects' thus relating 'all objects to all other objects with respect to a particular property'.²¹

In the example of a simple translation problem and solution, all the objects possessed the property of height. The units of measure used also 'possessed' the property of height so it became possible to take measurements of these objects according to a set of rules. In that example the rules were that the subjects must be measured while standing and while at the age 45 years. It is noteworthy that the units of measure did not possess the property height standing but only height. Height standing was only one of the many attributes with respect to height possessed by the subjects which could have been measured following a different set of rules.

This point is noteworthy from the standpoint that accounting principles should not be confused with attributes measured in applying these principles nor should principles or attributes be confused with the meaning associated with account balances. Strictly speaking, the only attribute of an object which can truly be said to be measured through use of any particular unit of measure is that property which both the

¹⁷Paul Rosenfield, 'General Price-Level Accounting and Foreign Operations', *Journal of Accountancy*, February 1971, p. 59.

¹⁸*ibid.* See also Staff of the Accounting Research Division, *Reporting the Financial Effects of Price-Level Changes* (Accounting Research Study No. 6) (New York: AICPA, 1965).

¹⁹Chambers, p. 77.

²⁰Sterling, p. 77.

²¹*ibid.*, p. 82.

unit of measure and the object measured possess. However, by following one set of rules for measuring over another, additional specific meaning can be given to the measurement. In the context of accounting measurement of objects or events, by following specific rules during the measurement process, i.e. accounting principles, the resulting measures take on additional specific meaning to any user who is aware of those rules. So it is that historical cost means something quite different from replacement cost even though these measures are all denominated in the same unit of measure. It is in combination that the rules of measurement followed (accounting principles) and the units of measure used (monetary units) give specific meaning to an account balance.

The property identified

Every unit of measure has a meaning in terms of a real-world property which is separate from any number which may be placed before it. Inch, metre, yard, foot, centimetre all refer to distance. No matter what operational rules of measurement one is forced or chooses to adhere to, the number resulting from measurement has meaning only after the unit of measure is specified. Given the number 100, its meaning and the information it conveys can be changed at will simply by changing the unit of measure.

The property expressed by any monetary unit is command over goods and services. As Heath explains:

The standard used in conventional accounting is not usually explicitly identified, but a standard is implicit in the type of monetary measurements made and reported. It is the amount of goods and services which can be purchased with a given amount of money. Those who use financial statements are assumed to understand and appreciate this equivalence between money on the one hand and goods and services on the other; if they did not, monetary measurement would convey little or no useful information.²²

Further, it is clearly general command over goods and services or general purchasing power which is expressed by currency measuring units. 'If a monetary scale is to serve as a measurement scale at any time, the significance attaching to any unit of it is necessarily its general significance, its general purchasing power.'²³

²²Lloyd C. Heath, 'Distinguishing Between Monetary and Nonmonetary Assets and Liabilities in General Price-Level Accounting', *Accounting Review*, July 1972, p. 459.

²³Chambers, p. 94. An extensive literature dealing with price level adjustment exists directed at the question of the nature of inflation as it relates to the accounting measuring

The dimensions of the unit

Every monetary unit, foreign or domestic, possesses both a time dimension and a place dimension: 'It is always a unit having a significance at a defined time and place.'²⁴ Correspondingly, the meaning of any accounting measure denominated in currency units as an expression of economic power expended, received or held can vary depending upon the time and place to which it applies.

It is generally variation in the time dimension that receives the most attention, i.e. price level accounting. Yet the dollar, for example, also varies the significance within a place dimension. A dollar in Austin, Texas, commands an appreciably larger quantity of goods and services than a dollar in New York City. Depending upon the location perspective of a viewer of a dollar measurement, the meaning and significance of that measure will differ. The measure possesses a place significance.

The place dimension of the dollar, however, is not limited to the geographical USA. The purchasing power of the dollar in Mexico differs materially from its purchasing power in the USA. Thus the place significance of the unit can vary just as can its time significance. However, it is very important to distinguish what place significance is being referred to so as not to introduce confusion and contradiction. A currency unit has a place significance as a counter and place significance as an expression of command over goods and services. In the first case the place significance of a dollar is limited to the USA. It is in the USA and to US users that an accounting measure denominated in dollars can, in general, be expected

unit and variation in this unit's significance. There is little purpose to be served in extensively reproducing that literature. Two almost universal conclusions of present interest and subsequent methodological interest have been reached, however. First, it is generally concluded that the significance of the monetary unit when used for accounting purposes is its general significance. Second, notwithstanding the crudeness and arbitrariness of price level indices, their use to adjust for changes in the significance of accounting units of measure is justifiable. The following are particularly useful references: Ralph Coughenour Jones, *Effects of Price Level Changes on Business Income, Capital and Taxes* (Columbus: American Accounting Association, 1956), esp. pp. 174-176. Chambers, esp. pp. 100, 199, 264, 228-229. Sterling, esp. pp. 340-350. *Accounting Principles Board Statement No. 3*, 'Financial Statements Restated for General Price-Level Changes' (New York: AICPA, 1969) esp. pp. 5 and 14. 'Adjustment of Financial Statements to Reflect Variations in the Purchasing Power of Money in Periods of Inflation', as reprinted in Kenneth B. Berg, Gerhard G. Mueller and Lauren M. Walker, *Readings in International Accounting*, (Boston: Houghton-Mifflin, 1969) esp. p. 257. Staff of the Accounting Research Division, *Accounting Research Study No. 6*, esp. pp. 9, 22 and 62-114. Richard Mattessich, *Accounting and Analytic Methods* (Homewood: Richard D. Irwin, 1964) esp. p. 181.

²⁴Chambers, p. 80.

to have significance. It is in this regard that in the translation problem heterogeneity of units exists; a common familiar counter is required. Yet the dollar unit, or for that matter any currency unit, can be used to express the property of command over goods and services in any place, anywhere in the place dimension, and so possesses a place significance as an economic expression.

For example, dollar measures of domestically-held assets could be restated in terms of the purchasing power of the dollar in Mexico simply by multiplying the original dollar values by a ratio of the purchasing power of the dollar in Mexico to the purchasing power of the dollar in the USA. The result would be measures which possess Mexican place significance as expressions of economic power and US place significance with regard to the counter used to present the measures. On a more general level, any accounting measure in a set of accounts can be represented as $a_{ijk}(x_{yz})$ where:

a_{ijk} = The measurement a entered to account i in the currency unit of country j at time k where:

i = 1 to n accounts

j = 1 to N countries

k = $t-u$ to t , where t denotes the current point in time

(x_{yz}) = The dimensionality of the unit of measure where:

x = the property expressed by all currency units of measure: general command over goods and services.

y = location in the place dimension – the country to which the expression x refers: the place significance of the unit as an expression of command over goods and services.

y = 1 to N countries

z = location in the time dimension – the point in time to which the expression x refers: the time significance of the unit as an expression of command over goods and services.

z = $t-u$ to t

Any pre-translation foreign accounting measure, where the subscript value of j and y for the US = 1, can be represented as $a_{i2k}(x_{2z})$. The heterogeneity of units problem exists with respect to the j subscript. The domestic measures are of the form $a_{i1k}(x_{1z})$. The foreign measure could be translated either as $a_{i1k}(x_{1z})$ or as $a_{i1k}(x_{2z})$. In point of fact, traditional translation results are of the form $a_{i1k}(x_{1z})$; i.e., $a_{i2k} \times E_k = a_{i1k}(x_{1z})$ where E_k is the exchange rate at time k which when applied in translation measures

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conversion value, $l_{2k}(x_{2z}) = a_{i1k}(x_{1z})$. On the other hand, $a_{i1k}(x_{2z})$ is the natural outcome of the translation solution described in this paper; i.e., $a_{i2k}(x_{2z}) \times l_{2k}(x_{2z})/l_{1k}(x_{1z}) = a_{i1k}(x_{2z})$. In both cases the heterogeneity of units problem is solved; the common counter ($j=1$) has been provided which has a significance to US users of financial measures. However, the place significance of the measures themselves differs; the first measures make reference to the state of relativity²⁵ that exists or existed in the foreign country location within the place dimension; the second makes reference to the US economy.

The point that a foreign measure, $a_{i2k}(x_{2z})$, can be converted to either $a_{i1k}(x_{2z})$ or $a_{i1k}(x_{1z})$ is of paramount importance. The alternatives can be likened to similar alternatives which exist in price level accounting. When accounts are restated for price level changes, almost invariably they are restated in terms of the size of the measurement unit during and at the end of the current period ($z=t$). Nevertheless, this does not have to be the case and statements for 1974 could be restated to 1935, or 1956, if any purpose could be seen for doing so ($z=t-u$). The same alternative is available in translation. The foreign accounts can be restated in dollars as expressions of command over goods and services with respect to the domestic economy or with respect to the foreign economy.

It can be argued quite convincingly that traditional translation involves measurement of an attribute of foreign-held resources not measured in the foreign accounts prior to translation – future remittable dollar value. In essence, this is treatment of the foreign-held assets as sources of converted dollars of economic significance in the US economy, $a_{i1k}(x_{1z})$. However, an attribute measured in the foreign accounts before translation, through the use of foreign currency units in taking the measurements, is command over goods and services expended, received or held in the foreign economy. That information content is lost in conventional translation in the attempt to measure a domestic attribute of the foreign-held resources. Most or all of the meaning inherent in the foreign accounting measures with

²⁵Any economic value – a current market value, a current replacement cost, a historical cost – is an expression of economic power and one which possesses meaning as a relative, not as an absolute. Just as motion itself is a meaningless concept except as between two physical systems or material bodies moving relative to each other, historical cost, for example, is meaningless except as between all other prices and values at a point in time in a particular place. This is in contrast to an absolute, the value itself being its own ultimate basis for meaning, independent as the velocity of light is independent of the motion of its source.

regard to economic power in the foreign economy, the state of relativity in the foreign economy (price level) and the effect of changes in the state of relativity (inflation) on firm values is lost. Yet since the attribute local command over goods and services existed in the accounts prior to translation, this information can be preserved simply by restating the foreign measures while preserving the original place significance of the foreign accounting measurements, $a_{ilk}(x_{2z})$.

Price level adjustment vis-à-vis translation

Earlier it was maintained that the price level problem and the translation problem are quite similar. Repeatedly price level accounting has been drawn upon in discussion of the translation problem, and this reliance on price level accounting reasoning is justified in that they are two parts of a single larger problem; that of obtaining overall homogeneity in the accounting measurement unit, of obtaining measures of standardised meaning when the measures are taken at different times and different places.

Solving this overall problem is important from both a measurement-additivity standpoint and from the standpoint of providing useful information. However, in this paper we have treated the problems as being separate for two reasons. First, at least at present, financial statements are generally not price level adjusted. Second, the separation is feasible since the problems are separable by the dimension of the measuring unit which is relevant to each. Whereas both are metrics problems, both are heterogeneity of units problems, both are standardisation problems, the price level problem deals with the time dimension of the unit only just as the translation problem deals solely with the place dimension.

Indeed, under no circumstances should the two problems be confused or, worse yet, the solution to one problem felt to be related to solution to the other problem. In particular, price level adjustment is in no way a solution to the translation problem. This point is important since a great deal of effort has been and is being expended by way of attempting to solve the translation problem through price level adjustment.²⁶ This effort is misplaced; a one

dimensional solution cannot solve a two dimensional problem. Solution of the price level problem simply changes the temporal characteristics of accounting measures and leaves the translation problem totally intact. Referring to the previous model, the only impact price level adjustment, and for that matter current value accounting methods as well, have on the translation problem is to alter the z subscript of certain pre-translation accounting measures from $t - u$ to t , leaving the heterogeneity of units in the place dimension unaltered.

Exchange rates

'Understanding the nature of translation will help to determine whether foreign exchange rates should in fact be used or whether other data should be used.'²⁷ Inquiry into the nature of translation was undertaken to seek just such an understanding and the rate question can now be addressed. The analysis suggests that the translation rates called for by the nature of the translation problem are similarity transformations, translation rates based upon ratios of the general purchasing power of each currency involved in a particular example of translation-consolidation. These coefficients can be termed price parity indices.

Under price parity theory the suitability of exchange rates for accounting translation purposes (and likewise any subsequent choice between alternative rates that could become necessary) becomes a purely empirical question. That is, do exchange rates behave like price parity indices to a great enough extent and in a timely fashion to warrant their use in periodic reporting as surrogates for direct measures of price parity? This question at present remains totally unassessed since studies focused on 'pre-float' periods cannot safely be taken as reliable evidence. Not only are the necessary studies yet to be done, but their conduct is doubly important since an 'exchange rate-price level covariance' assumption is also fundamental to much of the rationalisation offered for current methods.²⁸

Basic concepts of the price parity theory

The theory of translation which evolves from the preceding analysis may be summarised by way of contrast with conventional theory. To begin with,

²⁶For example, Zenoff and Zwick have advanced what they term the 'Net Assets Method'. In this method foreign currency financial statements are first adjusted for general price level changes and then, with the exception of net worth and debt, are translated at current exchange rates. David B. Zenoff and Jack Zwick, *International Financial Management* (Englewood Cliffs: Prentice-Hall, 1969) p. 500.

²⁷Leonard Lorensen, 'The Temporal Principle of Translation', *Journal of Accountancy*, August 1972, p. 48.

²⁸For perhaps the first truly clear perception and exposition of the significance of this assumption to conventional translation, see Robert Z. Aliber and Clyde P. Stickney, 'Measure of Foreign Exchange Exposure', *Accounting Review*, January 1975.

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traditional translation theory involves a concept of the firm as an extension of the parent, a source of dollar cash flows. The theory which underlies the price parity index approach involves a concept of the firm as a viable, separate going concern. Remittance to the parent is viewed as only one of many important aspects of foreign operations and of secondary significance as far as periodic evaluation of the success or failure of the foreign firm is concerned.

Traditional translation theory involves a concept of the translation problem as one of effectively measuring changes in remittable dollar value. In effect, traditional theory is directed toward emphasis on reflecting the utility of foreign-held resources to the parent company. In contrast, the theory underlying the price parity approach involves a concept of the translation problem as a metrics problem deriving from the fact that accounting measurements have been taken in terms of different measurement scales. To allow comparison or combination of sets of measurements standardisation is seen as required. In effect, the theory advanced is directed toward emphasis on the utility of foreign-held resources to the foreign company. This emphasis is derived from an understanding that the resources *are* held and used in the foreign economy, that the most rational expectation is that on the whole this will continue to be the case in the foreseeable future, and that many if not most transactions will occur in the foreign economy.

It is presumed that if the purpose of accounting is to provide information for evaluation of past decisions and methods employed,²⁹ then the fact that the decisions were made and the methods were employed with regard to a measurably different economic environment must be respected. It is presumed that if accounting is 'retrospective and contemporary monetary calculation the purpose of which is to provide a continuous source of financial information as a guide to future actions in markets',³⁰ then the fact that many or most of the input and output markets relevant to future actions reside in a measurably different economy must be respected. It is presumed that if the purpose of accounting is to provide useful information to any user, internal or external, then the fact that measurements in units of differing significance defy interpretation without standardisation must be respected. What is true in price level accounting is equally true in translation:

It is just as pointless to add monetary units representing different purchasing powers (dollars of 1950, of 1955 and of 1960 when the purchasing power of the dollar has continually changed) as it is to add Belgian francs and French francs when they do not stand at parity.³¹

The major conceptual difference between the price parity index approach and the traditional approach remains, however, in that the latter defines utility in terms of command over dollars. The theory of translation advanced, on the other hand, defines utility in terms of command over goods and services. The result is to replace the basic premises of traditional translation theory.

Traditional translation theory can be viewed as resting upon two fundamental premises. The basic premise is that the objective of conducting foreign operations is to generate cash flows to the domestic parent. This premise implies maximisation of remittable dollar values as the goal of the firm and its decision makers. The second premise, logically derived from this presumed objective, is that translation should measure levels and changes in remittable dollar value. Justification from the standpoint of providing relevant information is implicit in these premises; that is, the translation measurement process by definition will provide information relevant to assessing success or failure in meeting the major goal of the firm.

Our analysis implies rejection of the first premise of traditional translation theory. Consequently, the second premise as well as the whole direction taken in traditional reasoning (toward measurement) is rejected. A more fundamental goal for the firm has been tacitly adopted, one previously articulated by Churchman. The purpose of business enterprises, Churchman suggests, is the maximisation of 'power'; power is defined as the size of assets held; the size of assets held may be specified in terms of a general asset (money); accounting measures are standardised in terms of the general asset and such standardisation is useful.³² Such a view of business enterprise and accounting measurement may be extended to international business operations and translation.

Thus, the first premise of traditional translation theory can be replaced by a more fundamental premise: the purpose of conducting foreign operations is to maximise command over goods and services, the general asset expressed by all monetary units. In

²⁹Edgar O. Edwards and Philip W. Bell, *The Theory and Measurement of Business Income* (Berkeley: University of California Press, 1970) pp. 3-4.

³⁰Chambers, p. 102.

³¹*ibid*, p. 92. See also Staff of the Accounting Research Division, *Accounting Research Study No. 6*, p. 22.

³²C. West Churchman, *Prediction and Optimal Decision* (Englewood Cliffs: Prentice-Hall, 1961) pp. 325, 326 and 121-122.

turn, the second traditional premise can be replaced by the following: the objective of translation is to standardise accounting measures taken of the size of specific foreign and domestic assets in terms of the magnitude of general asset held. These are the basic premises upon which construction of a price parity theory may stand. The foregoing specification of the translation problem as a metrics problem, and the price parity index solution to the problem proposed, are consistent with these premises.

The basic premise that firms seek to maximise command over goods and services is not unique to Churchman. Churchman equates maximisation of 'power' with maximisation of the general asset money. Since the real economic significance of money resides in the command over goods and services it bestows, 'power' and purchasing power are equivalent. Sterling, on the other hand, uses the term utility but reaches the same conclusion as to the objectives of the firm and its managers. He equates utility with command over goods and services and then purchasing power with command over money valued assets:

Selection of the valuing agent required that we consider the nature of the enterprise, and we concluded that the motivation of the enterprise was provided by the trader-owner. In turn, the trader's motivation is the maximization of utility which varies in the same direction as the command over goods. Therefore we selected money as the appropriate valuing agent.³³

Chambers, in constructing his respective theory of accounting, went directly to command over goods and the implicit objective of maximising command over goods: 'Holders of money or of claims to money or goods convertible into money are concerned with the general qualities of money as a medium of exchange, with its capacity to command a wide range of goods.'³⁴ Finally, maximisation of command over goods and services (by way of maximising income and asset money values) as the basic motivation behind business enterprise is descriptive of foreign and domestic business activity alike:

The maximization of purchasing power available is a critical problem in international operations and every means possible must be used to achieve this result.³⁵

Adopting the premise that the multinational firm in conducting foreign operations seeks to maximise command over goods and services rather than

remittable dollar values, then, is to adopt the more fundamental of the two premises. The former allows for remittance behaviour but does not rely upon remittance for its validity. It cannot be contradicted by lack of remittance to the domestic company. It provides a goal for the foreign firm which is consistent with a domestic goal of obtaining a return on investment but it does not 'put the cart before the horse', so to speak. Remittance is a specific end rather than a means to an end and is but one of many possible ends which may rationally be sought periodically. The earning of accounting or money income, and the increase in command over goods and services which should correspondingly occur (foreign exchange being just one of these goods) is the means to that end.³⁶

Summary and conclusions

For decades there has been persistent dissatisfaction with exchange rate based translation and repeated calls have been made for an alternative theoretical base, particularly one which considers the impact of differences in relative prices. In this paper we have conducted a re-examination, at length and beginning at an elementary level, of the nature of the translation problem. The result is a broad outline of a price parity theory of translation. Essentially, the theory consists of (1) a view of foreign-based operations as separate going concerns operating in markedly different economic environments, (2) a view of the translation problem as a metrics problem, where it is seen as necessary and desirable to restate accounting measures so as to reflect, in terms of command over goods and services, the major element of different economic environments and (3) the basis for a methodology to solve the translation problem.

Contrary to some views, it was concluded that the translation problem *per se* neither resulted from variation in the qualitative settings of measurement, variation in the attributes measured or variation in the principles used to effect measurement, nor was the problem itself a measurement problem. Any such variations were seen to have to be intentionally and seemingly unnecessarily introduced to the problem, or unavoidable in the sense of having to be counteracted by means other than translation. As to seeking a measurement aim via translation, this was viewed as a value judgment independent of the translation problem and requiring independent justification. The

³³Sterling, p. 352.

³⁴Chambers, p. 94.

³⁵S. R. Sapienza, 'Inflation and Foreign Investments', *Financial Executive*, April 1963, p. 31.

³⁶To draw a domestic accounting analogy, the equivalent would be to choose maximisation of shareholder's dividends over maximisation of income as the focal point for accounting information production. The former is a specific end, the latter the means to that and other important ends.

basis for the value judgment to measure rather than restate was seen to reside in the premise that *the* fundamental objective of the conducting of foreign operations is to generate cash flows to the domestic company, the goal of the firm on a periodic basis being maximisation of remittable dollar (or pound) values of foreign-held resources. It was maintained that this objective was not truly fundamental, but was instead merely one, albeit important, specific end, and only one of many ends that might reasonably be sought periodically. Alternatively, it was the means to these ends that was seen as required to be the theoretical focus of translation. Hence it was concluded that the translation problem was, and to good purpose should be allowed to remain, a metrics problem, the source of which is the heterogeneity of the measuring units used to measure comparable economic attributes domestically and abroad.

The 'good purpose', it was concluded, was to express the economic power and results of the operations of the foreign firm, viewed as a viable concern expected to continue to operate for the foreseeable future in its present setting, in terms of that setting. The objective of the firm was deemed to be maximisation of command over goods and services locally, not maximisation of command over domestic currency. Consequently, it was concluded that the focus of reporting should be on this local command over goods and services. Finally, the solution to the translation metrics problem, it was concluded, lay in the general class of solutions to such problems, namely that of formulating a trans-

formation function in terms of the attribute expressed by all currency units of measure – general command over goods and services. These functions, termed price parity indices, form the basis for a translation methodology consistent with the theory developed.

Such methodology consists of applying temporarily referenced ratios of the relative purchasing power of any two currencies at issue, to restate in terms of the domestic currency unit the domestic equivalent of local command over goods and services and changes therein as expressed by the pre-translation foreign accounts. Whether exchange rates generated under the present 'floating' rate system constitute acceptable surrogate measures of price parity is an unanswered empirical question, not addressed in this paper. While price parity estimates are presently available for many industrially important countries, the question of obtaining acceptable price parity indices still remains an area for enquiry as do a whole series of empirical issues as to the comparative usefulness, predictive power and so on of price parity translated information. Likewise, propositions with empirical content within the theory itself warrant additional consideration, to test, for example, the general validity of the going concern concept relied upon.

Indeed, this paper leaves many questions unanswered. Yet, at the least, consideration has been given to a potentially viable alternative to present approaches to translation and hopefully in a way that provides ready access to a search for fallacious reasoning and/or propositions lacking in empirical validity.

Walter Taplin Prize

The Association of University Teachers of Accounting, the Council of Departments of Accounting Studies and *Accounting and Business Research* offer a prize of £75 for the best article published in each annual volume. The prize is named in honour of the journal's founding editor, Walter Taplin.

The winning article is chosen by the subscribers. Their choice in 1975/76 was K. P. Gee and K. V. Peasnell, *A Pragmatic Defence of Replacement Cost* (Autumn 1976).

Forthcoming Conferences

The 1978 Conference of the Association of University Teachers of Accounting will be organised by the University of Exeter and Plymouth Polytechnic, and held in Exeter on March 29th, 30th and 31st.

The Third International Congress of Accounting Historians will be held at the London Business School in August, 1980 during the centenary year of the Institute of Chartered Accountants in England and Wales. A special Accounting History issue of *Accounting and Business Research* will be published in 1980.

Accountancy Standards in Practice: the Experience of SSAP2

R. W. Perks and Leonora Butler

Introduction

The purpose of this article is to examine the extent of compliance with Statements of Standard Accounting Practice with particular reference to SSAP2 (Disclosure of accounting policies). The exercise which we carried out for this purpose is intended to highlight weaknesses in the existing standard and its implementation and may have implications for the future development of the accounting standards programme.

The accounting standards programme has had its critics, but overall it has probably been regarded as fairly successful, at least until recent difficulties over inflation accounting and deferred taxation. This overall impression of success derives largely from the annual Survey of Published Accounts produced by the Institute of Chartered Accountants in England and Wales. A detailed examination of the contents of this publication reveals a number of weaknesses in the implementation of SSAPs, but the introductory section on compliance with accounting standards appears to emphasise their success in practice. With reference to SSAP1 for example the 1976 Survey states that '... the evidence therefore indicates that SSAP1 was observed in the accounts included in the Survey.' On SSAP2 '... there has been a significant advance in the quality and extent of information provided.' On SSAP 3 '... all the companies included in the Survey have provided figures of earnings per share.' SSAP4 was followed '... in all but a very small proportion of cases, in some of which the amounts involved were not material.' On SSAP6¹ '... there has been a further advance.' On SSAP8 'No cases were noted ... of practices differing materially from this standard.'

The way in which the popular accountancy press has chosen to present the information contained in the Survey has certainly tended to emphasise the success of accounting standards in practice. A review of the 1975 Survey was introduced with the comment that 'Companies reporting during 1974/75 fall almost unanimously into line in complying with published accounting standards, with only five breaches of standards being recorded by auditors'.² The 1976 Survey was introduced similarly: 'Major companies now largely follow effective accounting standards'.³

There are, however, important reasons for questioning the general impression that compliance with accounting standards is satisfactory:

(1) The Survey was confined to 300 of the UK's largest 500 industrial companies whereas most SSAPs are applicable to all companies (and many other organisations), irrespective of size. Our evidence suggests that, at least in some cases, compliance with SSAPs is less satisfactory in small companies than in large quoted companies.

(2) There is a tendency to assume that the absence of comment in auditors' reports can be taken as evidence that accounts comply with standards. In the ICAEW's 1975 Survey for example it is stated that 'the most significant indication that the terms of SSAP6 are being generally observed by companies in all material respects, is the small number of cases in which comment on non-compliance was included in auditors' reports.' The 1976 Survey, referring to SSAP2, indicates that there is no means of ascertaining whether there has been appropriate disclosure 'other than by the absence of comments in auditors' reports.' Such an assumption should not be accepted without

¹The omission of any reference to SSAP5 (VAT) in the ICAEW's Survey is interesting. In the previous year's Survey it was stated that 'The application of this standard does not appear to present problems. There were few references to VAT in the 1974-5 reports and there was nothing to suggest that any company adopted accounting treatment at variance with the standard.' The sample of accounts taken for the purpose of our own exercise included one company which, in 1975, clearly showed turnover inclusive of VAT, and did not disclose the amount of VAT

as required by the standard. The company concerned is a subsidiary of one of the 300 companies included in the ICAEW's Survey, and the difficulty they appeared to encounter in complying with the standard casts doubt on the accounts of the parent company, and so on the general conclusions of the ICAEW's Survey.

²*Accountants Weekly*, 20th February 1976.

³*Accountants Weekly*, 11th February 1977.

supporting evidence. In a number of cases in our sample of companies the reverse appeared to be true, i.e. a standard had not been complied with, but there was no comment in the auditor's report. (3) Where the requirements of a standard are vague, or dependent on subjective judgement, it may be very difficult to establish criteria for determining whether or not there has been compliance with the standard. With SSAP1 for example a company need only be treated as an associate where the investing company is in a position to exercise significant influence, and, as the ICAEW's Survey recognises, 'It is a matter for the judgement of the directors of the investing companies to decide whether their influence is such as to require the investments to be treated as associated companies.' Where it is a matter for the judgement of the directors whether or not a standard applies to their company it is difficult to talk of non-compliance. The Survey's claim that of their 300 companies only one included an auditor's report referring to non-compliance with SSAP1 is therefore more an indication of the laxity of that standard than evidence of its effectiveness in practice.

Any general impression that we have effective accounting standards in practice should also be qualified by pointing out the limited number of accounting standards currently applicable, and that standards have yet to be issued on many important and controversial subjects. Of the eleven SSAPs issued to date two are in limbo (numbers 7 and 11) with a further two where compliance was not required in the accounts included in the most recent survey.

For the purpose of this exercise we examined the accounts of a random sample of 60 Scottish registered companies, comprising 20 large quoted, 20 smaller quoted and 20 unquoted companies. Although a larger sample would have been more representative of the population as a whole we believe that the information disclosed by our limited exercise should be of value.

The information on accounting policies disclosed in the accounts concerned was compared with (a) a reasonable interpretation of the requirements of SSAP2 and (b) the findings of the ICAEW's 1976 Survey.

SSAP2 requires that:

- (a) there should be a clear statement and explanation where accounts are not prepared on the basis of the four 'fundamental concepts' (going concern, accruals, consistency, prudence); and
- (b) the accounting policies followed for dealing with items that are judged material or critical in determining profit or loss for the year and in stating

the financial position should be disclosed.

Little guidance is given⁴ in determining whether or not an item is material or critical, and the ICAEW's 1975 Survey recognised the difficulty in determining whether or not there has been compliance, stating that '... it is not possible to distinguish accurately between cases of minimum fulfilment of requirements and material failure to comply.' For the purpose of this exercise four matters were selected for consideration on the grounds that for each:

- (1) there is little doubt that they are areas where the exercise of judgement is required;
- (2) there was no generally accepted general practice at the time and alternative treatments were widely known;
- (3) the selection of one or another generally acceptable policy is liable to produce widely different profit and/or asset figures;
- (4) published accounts generally contain sufficient information to give some indication whether alternative accounting policies are applicable in a particular company and so whether disclosure would be appropriate;
- (5) alternative policies are likely to be applicable to a wide range of different organisations.

The four matters are:

- (i) Depreciation
- (ii) Valuation of stocks and work-in-progress
- (iii) Goodwill
- (iv) Translation of foreign currencies.

Depreciation

From Table 1 it can be seen that almost all of the companies investigated possessed fixed assets which were subject to depreciation. Our sample confirmed the ICAEW's Survey evidence that about 90% of large quoted companies disclose their method(s) of depreciation. Amongst the smaller companies in our sample only about two-thirds disclosed this information. As regards rates of depreciation (or assumed lives, from which rates can be deduced) again the larger companies in our sample confirmed the ICAEW's Survey evidence that about 50% of large quoted companies disclose rates. The smaller quoted companies were less inclined to do so (32%), whilst the unquoted companies, surprisingly, were more inclined to do so (60%).

There is room for disagreement on the amount of disclosure which SSAP2 requires, but there can be

⁴The ICAEW's statement V10 on the Interpretation of 'Material' in Relation to Accounts is not particularly helpful in stating, for example, that 'In some circumstances a difference of about 10% might be acceptable but in other circumstances a difference as low as 3% might be too much.'

little doubt that depreciation is one of the major areas which is 'Subject to the exercise of judgement' and where the selection of one rather than another policy from generally accepted alternatives is likely to have a 'material or critical' effect on the amount of profit or loss for the year. Here the *method* of depreciation is likely to have less effect than the *rate* of depreciation. It is significant that the evidence shows that companies are more inclined to disclose the aspect of their depreciation policy which is *less* 'material or critical'. It appears that there is a need for more clarification on what aspects of policy should be disclosed, and ED 15 is presumably designed to fill this gap. The experience of SSAP 2 suggests, however, that many companies will do little more than provide the barest minimum of information that can be construed as compliance with a standard.

The ICAEW's Survey states that 'Some reports do not go beyond minimum requirements.' One company in our sample (with a major investment in fixed assets) stated only that 'depreciation is calculated on the cost of fixed assets in order to write off such costs over the estimated useful lives of those assets.' If information such as this is regarded as compliance with SSAP2 the Statement would seem to be of very limited value.

More detailed examination of the information disclosed in relation to accounting policy on depreciation reveals that the position is less satisfactory than Table 1 suggests. In particular the accuracy of the information disclosed is sometimes open to doubt, and in some cases changes in accounting policy from year to year are not properly disclosed.

With regard to the accuracy of the information disclosed the published accounts of companies do not normally include sufficient information to verify its accuracy (or to verify that non-disclosure conformed with the requirements of SSAP2). A few companies

included in our sample did, however, provide sufficient information to lead us to question the accuracy of their statements of accounting policies.

The Accounting Policies section of two companies' accounts clearly stated that leasehold land and buildings were written off over the period of the lease. Details of asset values given in the balance sheet suggested that this was not the case with long term leases. Subsequent correspondence with one of the companies revealed that long term leases were shown at cost in the accounts until the unexpired period of the lease reached 50 years; from that time they were written off over 50 years. Such a policy is not unusual, but the statement of accounting policy was, strictly, inaccurate.

A number of companies in our sample were asked for further details of their depreciation policy and one stated that although they usually had a good idea of the expected life of an asset their policy was to write them off as quickly as possible. The company, which owned a large fleet of trucks, stated that although they would keep a truck for at least five years before considering disposing of it, their policy was to write them off over three years. Discussions with auditors and other published information⁵ suggest that such prudence is not unusual. Simple statements of accounting policy, such as that assets are written off over their effective useful lives, should therefore be treated with caution.

Where a company classifies its fixed assets into a number of categories, and details the accounting policy (method and rate) for each, it is possible to see whether the amount of depreciation charged agrees with the amount suggested by the policy statement. Only a small minority of the companies

⁵See for example P. R. A. Kirkman and C. W. Nobes, 'Problems of Depreciation under a C.C.A. System' *Accountancy*, February 1977.

TABLE 1
Disclosure of accounting policies
DEPRECIATION

	<i>Survey of Published Accounts 1976</i>	<i>Large Quoted</i>	<i>Sample of Companies Smaller Quoted</i>	<i>Unquoted</i>
Number of companies depreciating fixed assets	300	20	19	20
Method disclosed (straight line etc.)	262 (87%)	18 (90%)	13 (68%)	13 (65%)
Information on rates disclosed	146 (49%)	10 (50%)	6 (32%)	12 (60%)

in our sample provided sufficient information in such a way as to enable this check to be carried out, and in four companies a substantial discrepancy was found. The cases were similar and the following summarised extract of one company's accounts indicates the problem.

<i>Fixed Assets</i>	<i>Plant and Equipment</i>
	£
Cost	
At 1st October 1974	84,000
Additions	52,000
Disposals	—
	<hr/> 136,000 <hr/>
Depreciation	
At 1st October 1974	14,000
Provided during year	42,000
Disposals	—
	<hr/>
Depreciation Policy: Depreciation is provided at rates which are calculated to write off the cost of assets as follows:	
Plant and Equipment — 25% on equal annual instalments basis	

The above extract indicates that the *maximum* charge for depreciation should be 25% of £136,000 = £34,000. The charge could be less if a full year's depreciation was not charged on the newly-acquired assets. It could also be reduced by the company's policy of crediting government grants to a deferred credit account and releasing them to the profit and loss account to reduce depreciation charges over the effective life of the asset. It is difficult to see how the charge could be more than £34,000, yet the actual figure is £42,000. The statement of depreciation policy is therefore misleading.

Where there is a change in accounting policy we believe that companies should state that a change has taken place, the reasons for the change, and should quantify the effects of that change on the financial results. This would appear to be in line with the requirements of SSAP2 which defines 'consistency' as a fundamental accounting concept and requires that 'where accounts are prepared on the basis of assumptions which differ in material respects from any of the generally accepted fundamental concepts . . . the facts should be explained. In the absence of a clear statement to the contrary, there is a presumption that the four fundamental concepts have been observed.' We should therefore be able to assume that there is consistency of accounting treatment of like items from one period to the next, unless there is a disclosure of a change in accounting policy.

Some companies do make disclosures of changes in accounting policies, but the absence of such a statement, and the absence of any comment by the auditors, does not necessarily mean that there has been no change. In our sample of companies only three made any reference to any change in accounting policy, and all three were to the effect that they had ceased depreciating freehold property. Two of these stated that the change had no significant effect on their accounts (although the amount was not quantified), whilst the third made no reference to the effects. Two further companies had made charges for depreciation of property in the previous year but not in the current year, but included no reference to the apparent change in accounting policy.

There are other matters regarding depreciation and fixed assets where the choice of accounting policy can materially affect the results. In most cases there is no way of knowing what policy the company has adopted or whether a change in accounting policy has taken place. There is, for example, room for differences in accounting policy regarding what to include in the asset value to be depreciated with items such as delivery and installation costs, and interest charges prior to the asset entering into profitable use. The adoption of different accounting policies in such areas can have substantial effects on the financial results and position of the company as shown by the annual accounts. If there is not adequate disclosure of accounting policies, of changes in policies and of the financial effects of such changes, companies, accountants and auditors are open to the accusation that they are sanctioning what the American Metcalf Committee calls 'creative accounting techniques'. The result may be that there is no way of knowing whether changes in a company's profit figures are due more to changes in economic performance or to changes in accounting policy.

Stocks and work-in-progress

Many of the general comments on accounting policies relating to depreciation apply equally to the valuation of stocks and work in progress. It is another area which is 'subject to the exercise of judgement' and where the choice of accounting policy can have a 'material or critical' effect on the amount of profit. Every company in our sample included some information on their policy for the valuation of stocks, but in many instances the quality of information left something to be desired. One company for example stated only that 'stocks are included at the lower of cost or net realisable value'. Such limited information was not untypical even where companies had a major part of their funds tied up in stocks.

Because types of stock held and methods of valuation vary widely from company to company the information which should be disclosed in accordance with SSAP2 depends very much on the circumstances of the company concerned. It is therefore difficult to obtain a reasonably comparable measure of the adequacy of disclosure. It is suggested, however, that policy regarding the inclusion of overhead costs in stock values would be material or critical in most companies and that disclosure on this matter is probably the best test of the effectiveness of SSAP2 regarding stocks and work in progress.

Table 2 confirms the pattern established with depreciation. Our sample supports the evidence of the ICAEW's Survey that about 70% of large quoted companies disclose their overhead policy, but amongst the smaller quoted and unquoted companies the proportion providing comparable information is smaller.

It should be pointed out that in some companies (e.g. retailing) there may be only one category of stocks (goods held for re-sale) on which there would generally be no question of including overheads, and so disclosure of overhead policy would not be necessary. It is fairly common for companies to give some indication where more than one category of stock is held (e.g. raw materials, work-in-progress, finished goods – though the monetary amounts of each category were not shown in most cases – SSAP9 not being in force during the period to which the accounts related). It may be assumed that where more than one category exists the question of policy regard-

ing inclusion of overhead costs would arise. Table 2 shows rather more companies disclosing overhead policy than disclosing the existence of more than one category of stock, except in the case of unquoted companies where there are more companies in our sample (60%) disclosing the existence of more than one category of stock than disclosing overhead policy (25%). The implications of this are:

(i) that some companies did not disclose where more than one category of stock was held. This can be seen from the fact that a proportion of companies disclosed their policy regarding overheads, thus implying the existence of more than one category of stock, but did not disclose that more than one category of stock was held.

(ii) In smaller companies there is less disclosure. This can be seen from the fact that the majority of companies in our sample of unquoted companies disclosed the existence of more than one category of stock, thus indicating that the question of including overheads would arise, but only one of them did disclose its policy on this matter.

The method of pricing stocks in terms of LIFO, FIFO, average, etc. may also critically affect the financial results of a company, but is disclosed by very few companies. Our sample included only one disclosure (out of 60) as compared with the ICAEW's Survey which included 36 of such disclosures (out of 300). In view of the existence of several widely used alternatives which have very different effects on the published accounts it is doubtful whether most companies are properly following the general requirements

TABLE 2

**Disclosure of accounting policies
STOCKS AND WORK-IN-PROGRESS**

	<i>Survey of Published Accounts 1976</i>	<i>Large Quoted</i>	<i>Sample of Companies Smaller Quoted</i>	<i>Unquoted</i>
Companies to which applicable	298	20	20	20
Overhead policy disclosed	220(74%)	14(70%)	11(55%)	5(25%)
Stocks shown in two or more categories with amounts	65(22%)	5(25%)	6(30%)	1(5%)
Separate elements mentioned without subdivision of amounts	145(48%)	6(30%)	4(20%)	11(55%)
	209(70%)	11(55%)	10(50%)	12(60%)

of SSAP2 in failing to disclose this information. Although SSAP9 slightly reduces the alternatives here (in not approving LIFO) it does little to extend, or even clarify, disclosure requirements in this respect.

Goodwill arising on consolidation

The need for adequate disclosure of accounting policies regarding the treatment of goodwill arising on consolidation is probably greater than in any other area. This is because the amounts involved can be very substantial indeed; there are a number of well-known alternative treatments on which no consensus is emerging (and guidance is not available from a relevant Exposure Draft); disclosure requirements under the Companies Acts are less stringent than with fixed assets; its intangibility and the non-specificity of what is represented by monetary amounts described as goodwill appears to be associated with a lack of clarity and consistency in the way in which it is treated in accounts; and the traditional conservatism of accountants and general suspicion of figures for goodwill sometimes results in a concern eliminating it as quickly as possible regardless of traditional accounting doctrines such as consistency and disclosure, with treatment that lacks relevance or rationality.

The decision on whether or not to amortise goodwill can have a major effect on profits. The main alternatives are:

- (1) to continue showing goodwill at cost;
- (2) to write down goodwill over a number of years;
- (3) to write off goodwill completely on acquisition.

The lack of any consensus or standard practice in this respect is illustrated in the ICAEW's Survey. Of the 162 companies clearly falling into one of the above three categories 64 were in the first, 39 in the second, and 59 in the third.

Where goodwill is written off a number of alternatives exist, and, again, the choice of policy can have a substantial effect on reported results. The main alternatives are to write it off:

- (1) through the profit and loss account as a normal item without separate disclosure;
- (2) through the profit and loss account, but with separate disclosure (probably as an exceptional item);
- (3) through the profit and loss account as an extraordinary item;
- (4) direct to reserves.

It is not normally possible to establish where the first alternative has been used but information on the relative popularity of the other three methods is contained in Table 3.

The variety of different practices shown above demonstrates the need for adequate disclosure of policy. The ICAEW's Survey details the extent of actual disclosure which appears unsatisfactory in a number of respects. Of the 230 companies including a reference to goodwill in their accounts only 168 specify policy on whether or not goodwill is written down. In our own sample 29 companies' accounts included references to goodwill. Only four of these specifically made reference to a policy on writing it off, but with a further 18 it was apparent that amounts were being written off, although no explanation of their policy on this matter was included. In the remaining seven cases one could only assume that it was not the companies' policy to write it off, or at least not until it seemed propitious to do so.

In many cases it is not clear whether or not goodwill is being written off. Even where there is a reduction in the balance sheet figure shown for goodwill it may not be clear whether this is because of the sale of a subsidiary, or whether it is an exceptional or normal write off. No company in our sample attempted to state their policy regarding the number of years over which goodwill is amortised, still less why such a period is selected.

In the accounts of one company in our sample an amount shown for goodwill in the previous year (in excess of £100,000) no longer appeared. There was no statement of accounting policy regarding the write off of goodwill, it was not shown in the profit

TABLE 3

Disclosure of accounting policies

GOODWILL ARISING ON CONSOLIDATION — AMORTISATION

	Survey	Sample
Number of cases where information is available	105 *	170
	%	%
Goodwill written down		
— as an exceptional item	6	6
— as an extraordinary item	48	59
— direct to reserves	46	35

*Based on Table 4 page 54 of the 1976 Survey which appears to include one case of an intangible asset other than goodwill (Table 28 page 110 details 104 cases of goodwill being written down).

0Comprising 10 large quoted, 6 smaller quoted and 1 unquoted.

and loss account as an exceptional or extraordinary item, and a reconciliation of the reserves figures indicated that it had not been written off directly to reserves. Correspondence with the company concerned, and their auditors, revealed that goodwill had arisen on the acquisition of a subsidiary company several years previously, and there had been no subsequent writing off. The auditors had advised greater prudence, but it would surely not be regarded as an acceptable accounting policy to suddenly write off the whole amount after a number of years, without providing an explanation in the published accounts, or even separately disclosing the item. It is interesting to note that the company concerned had chosen to write off the goodwill in a year when otherwise the profit figure would have shown a very substantial increase. It may be that this is a case of income smoothing and serves to remind us of early attitudes to depreciation. It appears that we cannot rely on company law, SSAP2 or auditors to ensure that information is given about such exceptional write-offs. Analysts frequently set aside figures relating to goodwill in order to avoid distortion: where there is no disclosure of such figures distortion is inevitable.

A more substantial figure for goodwill was shown in the accounts of another company in our sample, and it was not being written down from year to year. Correspondence with the company concerned revealed that the amount was paid primarily because the company which had been acquired several years previously had debentures in issue at a relatively low rate of interest. As the debentures were redeemable within a few years this would seem to be a case where goodwill should be written off over the life of the debentures. No such amortisation took place, there was no disclosure of their policy, and there was no comment by the auditor.

In the above two cases the companies concerned were willing to give us the information which cast doubt on their compliance with SSAP2. There is no way of knowing how many such matters are never brought to light.

Translation of foreign currencies

A company's accounting policies for dealing with translation and/or conversion of foreign currencies is likely to be material where the company has branches or subsidiary or associated companies operating abroad and where the company undertakes a significant volume of foreign trade. Published accounts disclose the existence of subsidiary and associated companies abroad (but not necessarily their scale of operations) and also the amount of exports, sometimes broken down according to the

area of the world where trade is undertaken. It is therefore usually possible to obtain some indication of whether or not the treatment of foreign currencies is a significant matter in a particular company, and so whether disclosure is appropriate.

The matters likely to have a significant effect on profits and financial position, and so requiring disclosure, are:

- (1) the method adopted for translation (e.g. historic or closing), and which method applies to which items;
- (2) the rate used for translation. With floating exchange rates there are sometimes significant fluctuations within a few days so that the selection of the date for the accounting year end (on which management has some flexibility) can affect the result. Official and unofficial exchange rates can also be markedly different.
- (3) the way in which any profit or loss arising on exchange is dealt with. This may be taken direct to reserves (either general or special) or it may be dealt with through the profit and loss account either without separate disclosure, or separately disclosed as an exceptional or extraordinary item.

In our sample of companies 14 had overseas associates or subsidiaries, and 13 of these revealed their method for translating foreign currencies; but only eight disclosed their method for dealing with differences arising on exchange. From the point of view of a user of accounts who is interested in the earnings figure, the method used for arriving at an exchange difference is probably of less importance than the amount involved and whether or not it has affected the earnings per share figure. This appears to be another example where companies are prepared to disclose part of their accounting policies, but not the most crucial part.

Disclosure of accounting policies regarding the treatment of foreign currencies would seem to be unsatisfactory in a number of respects. It is not only when a company has a direct investment in a foreign company that differences on exchange can arise. Differences can also arise on normal import and export transactions. In our sample 39 of the 60 companies engaged in export trade, and in nine instances exports amounted to more than 10% of turnover, yet in no instances was specific mention made of the treatment of such items. Only five of the companies in our sample disclosed the actual rates used, apparently believing this to be a significant matter, although the majority made no such disclosure. It is also a matter of some concern that nearly half of the companies in our sample making reference to exchange differences in their accounts either dealt with the item through the profit and loss

account as a normal item without disclosing the amount, or did not disclose the method used. In these instances users of accounts would have great difficulty in making inter-company comparisons in the absence of the information they would need to

ensure that like items had been dealt with in a consistent manner. No such cases were shown in the ICAEW's Survey. Whether this is due to the way in which the Survey results were presented, or whether because no such cases existed, is not clear.

TABLE 4

Disclosure of accounting policies
TRANSLATION OF FOREIGN CURRENCIES

	<i>Survey of Published Accounts 1976</i>	<i>Large Quoted</i>	<i>Sample of Companies Smaller Quoted</i>	<i>Unquoted</i>
Number of companies	300	20	20	20
Companies with overseas associates/ subsidiaries	n.a.	9	2	3
Number of these disclosing method	n.a.	9	2	2
Number of these disclosing treatment of difference	n.a.	5	2	1
		<i>ICAEW's Survey</i>	<i>Our Sample</i>	
Exchange differences				
Number of instances/companies referring to exchange differences		270*	19	
Taken direct to reserves		146*	4	
Extraordinary item		84*	5	
Exceptional item		40*	1	
P & L Account, amount not disclosed		—	5	
Treatment not shown		—	4	

*Based on number of instances shown in Table 4, p. 54; Tables 7 & 8, pages 60–61 show 257 companies disclosing method of translation compared with 208 showing exchange differences.

Summary

From the point of view of users of accounts the extent of disclosure of accounting policies is unsatisfactory in a number of respects. This arises from the non-specificity of SSAP2 in general, the reluctance of some companies to disclose more than the minimum that can be construed as compliance with the standard, and to the perhaps excessively wide range of disclosure which some users might require.

We have attempted to identify important areas where the adoption of different accounting policies is likely to have a material or critical effect on the financial results and position of a large proportion of companies. On some of these issues many or all of the companies included in our sample make reference

to their accounting policies. In a minority of cases such reference is so general as to be of minimal value. In the majority of cases certain useful aspects of policy are disclosed. The evidence of the ICAEW's Survey and of our own sample of companies, however, suggests that in many cases the more critical aspect of an accounting policy is not disclosed (e.g. method of depreciation disclosed but not rate; method of translating foreign currencies disclosed, but not treatment of exchange differences).

In most cases there is no way of verifying whether non-disclosure of accounting policies is acceptable under SSAP2 in not being 'material or critical' other than relying on the auditor's opinion. A number

of cases where the information included in statements of accounting policy appeared to be inaccurate or misleading led us to question the value of some auditors' reports in this respect. Similarly in most cases there is no way of knowing whether changes in accounting policy have taken place other than relying on the auditor enforcing the concept of consistency. Again in a number of cases it appeared that a change in accounting policy had taken place without disclosure or comment by the auditor.

Such inadequacies as there are in disclosure of accounting policies limit the value of published accounts in two important respects:

(1) Analysts are unable to adjust the accounts of different companies to a comparable basis in order to make valid comparisons of their financial results where the policies adopted for dealing with important items and/or the amounts involved (e.g. with write-offs of goodwill or exchange differences) are not disclosed.

(2) It is not possible to ascertain with reasonable certainty whether changes in a particular company's earnings figures from year to year are due more to changes in economic performance or to changes in accounting policy.

Conclusion

Many practising accountants may find the information revealed in this article unremarkable, recognising the limitations of the financial statements which they process.

A user of accounts is likely to expect higher standards. Colin Jones⁶ has drawn attention to this dichotomy between the realities of the accounting profession and the expectations of users of published accounts. This dichotomy, he considered, resulted in adverse publicity in the late 1960s which led to the development of the accounting standards pro-

gramme. The effect of this has undoubtedly been an improvement in standards of financial reporting, but alleviation of criticism has been temporary. This may be due in part to a decline in the credibility of the Accounting Standards Committee following prevarication on key issues, but it may also be that there has been an accentuation of the dichotomy. The accounting standards programme has probably increased user expectations by publishing fine-sounding SSAPs, but the non-fulfilment of the ambitions of these statements in some cases has led to disillusionment and to increasing criticism of the profession.

With accounting standards generally it may be that the profession will have to choose between (i) fulfilling the ambitions of the accounting standards programme, and (ii) disabusing users of accounts of unrealistic expectations. Either course of action has serious implications but there is a danger that the continued promulgation of ambitious standards which are of limited effectiveness in practice will lead to further disillusionment and increased criticism of the profession.

With SSAP2 in particular if we cannot rely on auditors to ensure full, fair and effective disclosure of accounting policies and of changes in policies, there may be a need for an extensive, prescriptive, specific list of accounting policy disclosure requirements. More recent SSAPs and EDs are already beginning to build such a tome, but we have a long way to go before it reaches American proportions, and the signs are that their building is still far from complete. Many would prefer to rely on the opinion of the auditor, but there is an increasing recognition of the need for improvements in this area⁷. It remains to be seen whether the development of auditing standards by the profession will serve to accentuate or diminish the dichotomy between accounting practice and user expectations.

⁶Colin Jones, 'Accounting Standards - A Blind Alley?' *Accounting and Business Research*, Autumn 1975.

⁷See for example Ian Hay Davidson, 'The Future of Auditing is in Our Own Hands', *Accountancy*, July 1977.

Timeliness in Corporate Reporting: Some Further Comment

Donald M. Gilling

In a recent paper in this journal, Curtis explored a number of issues relating to the timeliness of corporate reporting in New Zealand.¹ In particular, he reported an average lag of 83 days between balance date and the date of the auditors' report. While considering it not politic to address directly the obvious question of which party is to blame for the lack of punctuality in corporate reporting, Curtis reported a statistically significant relationship between speed of reporting and corporate attributes of profitability. Specifically, he suggested that slow reporters tended to be less profitable as a group than fast reporters.

The production of an audited set of financial statements is a function of both the management who prepare the statements and the auditors who examine them. Punctuality, or lack of it, in the production of financial statements can be attributed to the efficiency, or tardiness, of either management or auditor, or to the interaction of management and auditor. In some cases, a conscious desire by management to report quickly will result in the imposition on the auditor of specific time goals and therefore the speed of production will be largely determined by the management. In the absence of managerial imposed time schedules, the reporting lag will largely be determined by the speed and efficiency of the auditor and the manner in which he schedules his work.

Even in those cases where management imposes time schedules, it is realistic to assume that the auditor will be able to influence the process of setting time constraints.

As the lag with which we are concerned is essentially an auditing lag, reflecting the auditors' decisions on what is to be done, the manner in which it is to be done and the time at which it is to be done, it would seem to be more appropriate to examine the auditors' activity and attributes, rather than corporate attributes.

Accordingly, this comment examines some of the attributes of New Zealand's auditors and offers some

tentative explanations that may be of significance as we approach, however indirectly, the reasons for the apparent lack of punctuality in corporate reporting in New Zealand.

The data reported in this comment are drawn from a survey of audit reporting practices in New Zealand.² The sample is based on a survey of the 1976 annual reports of 187 New Zealand public companies. The sample consisted of all the annual reports available to the author, and represents approximately 73% of all listed public companies in New Zealand.

Like Curtis' 1974 study, the 1976 study revealed a wide diversity in the balance dates used by New Zealand companies. Table 1 presents a comparison of the two studies.

TABLE 1
Accounting Period Balance Dates

(a) Most common balance dates

Year end	Curtis 1974	Gilling 1976
	Percentage of companies	
	%	%
March 31	39.7	39.8
June 30	19.1	16.8
July 31	6.8	5.6
December 31	5.8	7.9
	71.4	70.1
Other dates	28.6	29.9
	100.0	100.0

(b) Percentage of companies per quarter

	%	%
January – March	44.6	44.9
April – June	25.5	24.2
July – September	16.2	14.6
October – December	13.7	16.3
	100.0	100.0

¹John K. Curtis, 'Relationships Between Timeliness in Corporate Reporting and Corporate Attributes', *Accounting and Business Research*, Winter 1976, pp. 45–56.

²Donald M. Gilling, 'Auditing the New Zealand Auditor', *Accountants' Journal* (N.Z.), June 1977, pp. 174–180.

More importantly, however, the 1976 study showed that the New Zealand auditing profession is highly concentrated, with the seven largest auditing firms accounting for over 80% of the auditing of public companies in New Zealand. Each of these leading auditing firms has a multi-office style of practice, with separate offices in the main centres of population. In addition, each of these leading firms has linkages with the large international accounting firms. With one exception, the New Zealand firms are prevented from using the international name by a specific prohibition in the Code of Ethics of the New Zealand Society of Accountants.

Table 2 identifies the leading firms in New Zealand and their overseas linkages, and provides an analysis of the structure of the profession in New Zealand.

Time taken to sign audit report

In 1976, the average interval between balance day and the date of the auditors' report was 80 days, an improvement of 3 days over 1974. As a group, however, the leading seven auditing firms on average perform their work and sign their report in only 75 days. As revealed in Table 3, five of the seven auditing firms produced their report in a shorter time than the average for all auditors, and at least three of these firms were, on average, significantly faster than the average auditor.

If the clients of the leading seven auditing firms are divided into those with assets of less than five million and those with more than five million in assets, on the basis that above five million in assets clients are more likely to have numerous subsidiaries, and widespread locations including overseas locations, it could be expected that the larger companies would present more auditing problems and therefore require a longer time period for the completion of the audit. In fact, the reverse is true. As can be seen from Table 3, five of the seven leading auditors produce their audit reports significantly quicker for large companies than they do for smaller companies.

Allied with this, the twenty overseas companies operating in New Zealand under an overseas name had their audit reports signed, on average, in 53 days. Similarly, the 24 public companies in New Zealand with assets over \$50 million had their audit reports signed on average in 70 days. However, as the number of clients of the leading auditing firm increases there is a tendency for the average time taken to complete an audit to increase similarly.

These results suggest that the leading auditing firms in New Zealand, who audit nearly 70% of New Zealand's public companies, work faster than the smaller auditing firms and consciously schedule their work in the following order:

1. Overseas companies
2. Large public companies
3. Smaller public companies

TABLE 2

The Structure of the Auditing Profession in New Zealand

	<i>No. of clients</i>	<i>Clients %</i>	<i>Assets %</i>	<i>Share- holders' funds %</i>	<i>Net profit %</i>	<i>Audit fees %</i>	<i>Represent in New Zealand</i>
1. Hutchinson Hull	23.5	12.56	17.56	17.42	16.62	13.44	Deloitte, Haskins & Sells
2. Wilkinson Wilberfoss	27.5	14.71	16.37	16.34	17.76	19.04	Arthur Young
3. Gilfillan	15	8.02	12.09	12.06	14.03	12.79	Peat, Marwick, Mitchell
4. Morris Patrick	13	6.95	12.52	12.97	14.17	6.45	McLintock, Main Lafrentz
5. Barr Burgess & Stewart	26	13.90	10.12	13.55	10.53	11.04	Coopers and Lybrand
6. Hunt Duthie	13	6.95	8.81	8.28	7.70	5.77	Whinney Murray
7. Price Waterhouse	11	5.88	5.69	5.35	4.93	5.52	Ernst & Ernst Price Waterhouse
<hr/>							
43 other firms	129	68.97	83.16	85.97	85.74	74.05	
	58	31.03	16.84	14.03	14.26	25.95	
	187	100.00	100.00	100.00	100.00	100.00	

TABLE 3**Time Taken by Leading Auditing Firms to Sign their Reports**

	Average time	Time for companies with more than \$5 million in assets	Time for companies with less than \$5 million in assets	Range
	(days)	(days)	(days)	(days)
1. Hutchinson Hull	71	66	99	23-132
2. Wilkinson Wilberfoss	72	76	57	7-147
3. Gilfillan	67	61	76	39-104
4. Morris Patrick	74	78	66	52-100
5. Barr Burgess & Stewart	86	81	100	37-140
6. Hunt Duthie	89	88	90	40-203
7. Price Waterhouse	64	62	82	11-129

The reasons for this ordering of priorities may in part be due to client pressure, but perhaps more significantly to the auditor's need to plan, control and even out his work flow. Furthermore, as large companies consume more of the auditors' time and costs than do small companies, it would seem reasonable that recovery of those costs would dictate speedier completion of large company audits and therefore speedier recovery of fees.

In contrast, the remaining 43 auditing firms, having smaller companies as clients, take nearer 90 days on average to sign the audit report. Indeed, this

group of smaller auditors, auditing only 30% of the sample companies, accounted for 52% of the cases of reporting lags greater than 100 days.

The analysis of the 1976 results suggests that it may be more important to examine the attributes and actions of the auditors rather than corporate attributes. But in the final analysis, the reasons for punctuality, or lack of it, in New Zealand corporate reporting, can only be understood when the questions of what decisions are made in regard to corporate reporting? who makes them? and why are they made? are asked and answered.

Segmental Disclosures and the Segment Identification Problem

C.R. Emmanuel and S.J. Gray

Introduction

A feature of large UK companies is that they have become more diversified in recent years in terms of both business activity and international location and markets. But has this development been matched by a corresponding extension in the quality and quantity of disclosure to include reports adequately covering the different segments of a multibusiness multinational company's operations?

This is the problem focused on in this paper; and it is one which has currently been receiving some official attention both in the UK and overseas, especially in North America.¹ Such attention provides evidence of the importance of the problem of segmental disclosures, which, in turn, is related to the continual problem of evaluating the prospects of a company. For the usual suggestion is that it is by reference to the different rates of growth, profitability and risk which may attach to the different segments of a business that the evaluation process may be facilitated and forecasting performance improved.² It would seem that a knowledge of the risk-return profiles of the parts of the business allows a more informed appraisal to be made of the performance and prospects of the company as a whole. Disaggregated data is also considered significant for the decisions of a growing number of interested parties including employees, the Government and the general public.

¹In the UK, the Accounting Standards Committee is studying the matter with a view to issuing a proposal. In the USA, note the Standard No 14 issued by the Financial Accounting Standards Board: *Financial Reporting for Segments of a Business Enterprise* (1976). In Canada, note the segmental disclosure requirements of the recent Canada Business Corporations Act, 1976.

²See, for example, Kochanek, Richard Frank, 'Segmental Financial Disclosure by Diversified Firms and Security Prices', *Accounting Review*, April 1974, pp. 245-258; and Collins, Daniel W., 'Predicting Earnings with Sub-Entity Data: some Further Evidence', *Journal of Accounting Research*, Spring 1976, pp. 163-177. Further references include Mautz, R. K., *Financial Reporting by Diversified Companies* (Financial Executives Research Foundation, 1968); Accountants International Study Group, *Reporting by Diversified Companies* (1972); Rappaport, Alfred and Lerner, Eugene, M., *A Framework for Financial Reporting by Diversified Companies* (NAA, 1969) and *Segment Reporting for Managers and Investors* (NAA, 1972).

The segmental disclosure issue is of serious concern in the UK at the present time. Whilst there is an existing legal requirement in the 1967 Companies Act (s.17) to disclose the turnover and profit (before tax) of substantially different classes of business there has arisen some doubt as to the effectiveness of this requirement in practice. The problem is to determine what constitutes a substantially different class of business. This is not defined; and hence is left to the subjective assessment of directors. The result of such a process could well differ as between companies and may permit no disclosure at all. Furthermore, the auditor is not involved because the Directors Report, where such disclosures are presented, does not currently come within the ambit of the audit as do the financial statements themselves. In the absence of guidelines, the possible bases of classification, and significance criteria for their recognition, which could be adopted by companies, are a matter of some speculation. The crux of the problem then has been that of identifying different classes of business. This is fundamental since no amount of sophisticated data can remedy the damage caused by segments wrongly identified in the first place.

Doubts about existing segmental disclosure requirements are well expressed in the Department of Trade's Green Paper, *The Future of Company Reports* (1977) wherein it is stated that the s.17 requirement 'has not worked well because it leaves too much to the discretion of directors and as a result the information disclosed has been of only limited value' (para 39). This echoes the earlier findings of the profession which appeared in *The Corporate Report* (published by the Accounting Standards Committee in 1975) that the interpretation and application of the Companies Act 'varies and gives room for improvement' (para 6.50). But whilst these misgivings would seem justified the precise nature and extent of the problem in practice has yet to be identified.

However, as regards international analyses required by the Stock Exchange, the profession's view is that requirements here 'have proved less difficult to implement' (para 6.50). Nevertheless, the Department

of Trade was not so sanguine in an earlier draft of its Green Paper when it stated that 'An aspect of disaggregation is the split between home and overseas activities. The Government Statistical Service would welcome more information about this, and there may be a general public interest in the proportion of a company's business and assets which lie overseas and in which part of the world'. Clearly, there would also seem to be a problem in this area though once again a precise specification is lacking.

It is against this background that an attempt will be made to examine the extent to which large UK companies disclose segmental information. More importantly, the quality of the disclosures provided and where there is no disclosure whether such an action can be justified, is investigated. The essential question posed as the basis for this investigation is whether or not the information disclosed accurately reflects the business and international operations of the companies concerned.

It was decided that the basis for the investigation should be limited to the latest 1975/76 Company Reports of the 100 largest quoted industrial companies ranked by turnover in *The Times 1000* for 1975/76.³ The choice of this sample was partly decided by accessibility and the time constraint; and partly because these companies account for a considerable proportion of economic activity and are more likely to be multibusiness and multinational. Also any deficiencies in disclosure discovered at this level are likely to be met when other smaller companies are examined. In studying the annual reports in question, it was considered useful to investigate

not only the actual segmental analyses disclosed but also to gather evidence from all parts of the company report as to the business and international activities of the company. In this way it was hoped that some insights into the quality of the disclosures made could be gained.

The findings of this empirical investigation are presented under the separate headings of business and international analyses.

Business analyses

The Institute of Chartered Accountants' *Survey of Published Accounts 1975* reveals that in 1974/75 only 57% of the 300 companies surveyed provided both turnover and profit analyses whilst 65% provided either a full or partial (turnover or profit) analysis. This compares with 70% and 78% respectively of the 100 largest quoted Industrial Companies ranked in *The Times 1000* for 1975/76 as surveyed here in Table 1.

More encouraging results are provided by the largest 100 but there is nevertheless a significant proportion of companies which do not provide any analysis. However, the Institute's surveys only cover the incidence of disclosure, not its quality. It is hence the intention here to investigate this aspect by reference to the company reports of the 100 companies forming the basis of the survey already referred to. Only then can an assessment be made of the value of the segmental disclosures and whether or not those that have provided only single class of business disclosures are justified in so doing.

As suggested earlier, there is a necessity for some yardstick or guideline by which to assess the quality of disclosure. An initial and exploratory yardstick

³Note that the 1975/76 reports referred to were the latest available as at 1 August 1976.

TABLE 1
Business analysis: Segmental disclosures

Disclosure	Institute Survey					Largest 100 Survey 1975/76
	1970/71	1971/72	1972/73	1973/74	1974/75	
1. Full Analysis (Turnover and Profit)	150	156	159	180	171	70
2. Partial Analysis (Turnover Only)	12	17	15	40	19	7
3. Partial Analysis (Profit Only)	5	4	5	2	4	1
Analysis Provided	167 (56%)	177 (59%)	179 (60%)	222 (74%)	194 (65%)	78 (78%)
No Analysis Provided	133 (44%)	123 (41%)	121 (40%)	78 (26%)	106 (35%)	22 (22%)
Total Companies	300	300	300	300	300	100

considered useful here is that presented by supplementary information about the company's activities and organisation structure which is usually given in other parts of the company report. For if emphasis is placed upon such information by management it would seem that some significance must also be attached in terms of understanding the nature of the business. The question at issue is thus whether or not the s.17 business analysis disclosures are consistent with how the company sees itself. Inconsistency as between segmental disclosures and supplementary disclosures about activities must surely confuse and may well mislead users. Moreover, the significant aspects of the company's organisation in response to its effective product/market environment are often apparent from other parts of the company report, and it is this information which may throw light on the quality of disclosure provided.⁴ In assessing such data it must, however, be emphasised that a certain amount of interpretation has been unavoidable. But a conservative approach has nevertheless been adopted throughout the survey process.

⁴The opinion is growing that accounting information systems cannot be developed in isolation from considerations of the company's environment, organisation and decision-making philosophy. See Gordon, L. A. and Miller, D. 'A Contingency Framework for the Design of Accounting Information Systems', *Accounting, Organisations and Society*, vol. 1, no. 1, 1976. This view borrows and builds on the earlier contributions of Lawrence, P. and Lorsch, J. *Organisations and Environment* (Harvard University Press, 1967) and many others which indicate the relationship between types of organisational structures and environmental conditions.

Supplementary information about the company's organisation can be gathered from the statement of principal activities (required under s.16) and from the Chairman's Review and the Directors Report. Moreover, information may also be gathered from the listing of subsidiaries (required under s.3) and from other sundry data such as organisation charts, product data, managerial responsibilities, and so on which are sometimes provided.

Consistency with organisational disclosures

Our first concern is whether the disclosures made on a segmental or single class of business basis are consistent with the company report taken as a whole. It would seem from this investigation that this is not usually the case. It can be seen from Table 2 that of the 78 companies providing *segmental disclosures* of business activities only 35 companies provide information which is consistent with supplementary disclosures about the company's organisation as gathered from the Chairman's Review/Directors Report. This situation is supported by supplementary disclosures relating to the grouping of subsidiaries.

It can be concluded then, in respect to the business analyses provided by the 100 largest companies, that in the case of more than half of them the s.17 disclosures provided less information about their activities than was indicated in their supplementary data, and that such disclosures do not match up with how the companies concerned organise and see themselves in practice. This would seem to be a devastating indictment of the relevance of such

TABLE 2

Business analysis: Consistency of segmental disclosures with supplementary disclosures about the company's organisation

Disclosure	Information about the Company's Organisation							
	Chairman's Review/Directors Report				Grouping of Subsidiaries			
	Consistent	Not Consistent	No Information	Total Companies	Consistent	Not Consistent	No Information	Total Companies
Full Analysis (Turnover and Profit)	33	35	2	70	25	18	27	70
Partial Analysis (Turnover or Profit only)	2	5	1	8	1	1	6	8
Analysis Provided	35	40	3	78	26	19	33	78
No Analysis Provided				22				22
Total Companies				100				100

TABLE 3

Business analysis: Consistency of single class of business disclosure with supplementary disclosures about the company's organisation

Information about the Company's Organisation							
Chairman's Review/Directors Report				Grouping of Subsidiaries			
Consistent	Not Consistent	No Information	Total Companies	Consistent	Not Consistent	No Information	Total Companies
1	19 (86%)	2	22	1	9 (41%)	12	22

disclosures particularly when supplementary information in such company reports suggests a wide range of major activities of some significance. And yet inadequate *quantitative* information is provided. An example is the Annual Report (1975) for Spillers Limited which gives three principal activities, excluding investment income, in complying with section 17. Yet the organisational structure of the firm explicitly shows seven operating activities. In the list of 'Activities of the Group' a further four activities over and above those shown in the organisational structure are highlighted.

The weakness of the 1967 Act is thus exposed, as is any requirement couched in such general terms, for without criteria by which to identify different classes of business it is impossible to hold directors accountable. After all, an opinion cannot be independently verified except to the extent that the opinion exists. It cannot be questioned on factual grounds for it is personal to the individual expressing it. So if directors are to be made truly accountable there must be some independent and verifiable means of establishing whether or not the segmental disclosures provided actually reflect the business activities of a company. At the least it would seem that a company's organisation which is constructed to cope with its various activities could provide a verifiable criterion. But as we see here such a modest criterion is not being met. Clearly there is some scope for improved disclosure. Before developing this aspect, however, it will be recalled that only those companies making segmental disclosures have been considered. What of companies making only *single class of business* disclosures? Table 3 indicates that there is just as much a problem of inconsistency here as with those companies providing segmental analyses.

The inconsistencies are perhaps more serious in the case of those companies making only single class of business disclosures because they indicate that no attempt has been made to comply with s.17 of the legislation. Note, for example, that Allied Breweries

Limited Report and Accounts for 1975 gives no disclosure under the Companies Act 1967. However, a note appearing below a list of subsidiary companies which are separated into Beer and Hotels Division, Wine, Spirits and Soft Drinks Division, and International Division states that 'the list of subsidiary companies includes those which principally affect the amount of the profit or assets in the group'. In contrast, at least some effort has been made by those providing *some* form of analysis even if it is in many cases less than satisfactory.

Whilst it is clear that in a majority of cases, both in respect of those providing segmental disclosures and those providing only single class of business disclosure, there is no consistency as between disclosure and information about the company's organisation, it may be that the disclosures made *are* consistent with some form of *standard classification*. Of course, for certain companies their disclosures may well be consistent with both their own organisation *and* with a standard classification. Our second concern centres on the consistency of disclosure or non-disclosure with relation to an external classification of business activities. An initial step is to decide on the classification system to be used. Two major externally verifiable classification systems are available. These are the UK Standard Industrial Classification comprised initially of 27 Orders and 181 Minimum List Headings and the Financial Times - Actuaries Index Classification. These systems are widely used with special reference to Government statistics and investment evaluation respectively. To what extent then are the disclosures made by the 100 largest companies consistent with such classification systems?

Consistency with the SIC

The results of applying the UK Standard Industrial Classification to the 78 companies making *segmental disclosures* are set out in Table 4.

TABLE 4

Business analysis: Consistency of segmental disclosures with the UK standard industrial classification

Segmental Disclosures	SIC Order (1 digit)				SIC Minimum List Heading (3 digit)			
	Consistent	Partially Consistent	Not Consistent	Total Companies	Consistent	Partially Consistent	Not Consistent	Total Companies
Full Analysis	46	14	10	70	23	24	23	70
Partial Analysis	6	1	1	8	2	4	2	8
Analysis Provided	52	15	11	78	25	28	25	78
No Analysis Provided				22				22
Total Companies				100				100

There would seem to be two main points emerging from this. Firstly, it is clear that the feasibility of using the standard industrial classification system is established for 67% of the disclosing companies at the order level and for 32% at the 3 digit level. Secondly, for those companies whose disclosures are inconsistent there must emerge the question as to whether such inconsistencies arise from difficulties in respect to feasibility, perhaps owing to a lack of relevance for a particular company, or through an unwillingness to provide analyses which are in fact consistent.

It can be seen from Table 5 that for those companies providing only *single class of business* disclosures a similar pattern emerges.

This is a further indictment of such companies providing only single class of business disclosures – for if such single classes cannot be identified there is likely to be little meaning, in terms of significance and comparability, which could be given by users to the information disclosed about the company's performance. Without some external reference point it would seem extremely difficult for any common basis of interpretability to be established. The Annual Report and Statement of Accounts of FMC Limited for 1975 provides an interesting example. The operating subsidiaries listing states

that Marsh and Baxter Limited, a wholly owned subsidiary, engages in bacon and ham curing, the manufacture of sausages, pies etc., the wholesale distribution of pork and other fresh meats. At the SIC Order level these are different activities: bacon curing falling under food, drink and tobacco whilst wholesaling of food is part of the distributive trades order. At the SIC Minimum List Heading level, FMC could make disclosures under the bacon curing, vegetable and animal oils and fats, animal and poultry foods categories. In fact, FMC does not provide any business analysis.

Consistency of organisational information with the SIC

Consideration of this aspect can be taken further by examining whether or not supplementary disclosures about a company's organisation of its business activities are in fact consistent with the UK Standard Industrial Classification, because this could provide an explanation of the quality of disclosure discovered. To the extent that they *are* consistent with the SIC then any difficulties of feasibility or relevance in respect to disclosure by particular companies on this basis would seem necessarily to disappear.

TABLE 5

Business analysis: Consistency of single class of business disclosures with the UK standard industrial classification

SIC Order (1 digit)				SIC Minimum List Heading (3 digit)			
Consistent	Partially Consistent	Not Consistent	Total Companies	Consistent	Partially Consistent	Not Consistent	Total Companies
7	–	15 (68%)	22	4	–	18 (82%)	22

TABLE 6

Business analysis: Consistency of supplementary disclosures about the company's organisation with the UK standard industrial classification

<i>Segmental Disclosures</i>	<i>SIC Order (1 digit)</i>				<i>SIC Minimum List Heading (3 digit)</i>			
	<i>Consistent</i>	<i>Partially Consistent</i>	<i>Not Consistent</i>	<i>Total Companies</i>	<i>Consistent</i>	<i>Partially Consistent</i>	<i>Not Consistent</i>	<i>Total Companies</i>
Full Analysis	61	7	2	70	54	12	4	70
Partial Analysis	7	1	—	8	6	1	1	8
Analysis Provided	68	8	2	78	60	13	5	78
No Analysis Provided				22				22
Total Companies				100				100

TABLE 7

Business analysis: Consistency of supplementary disclosures about the company's organisation with the UK standard industrial classification in the case of single class of business disclosure

<i>SIC Order</i>				<i>SIC Minimum List Heading (3 digit)</i>			
<i>Consistent</i>	<i>Partially Consistent</i>	<i>Not Consistent</i>	<i>Total Companies</i>	<i>Consistent</i>	<i>Partially Consistent</i>	<i>Not Consistent</i>	<i>Total Companies</i>
20 (91%)	1	1	22	15 (68%)	6	1	22

Tables 6 and 7, relating to companies providing *segmental disclosures* and *single class of business disclosure* respectively, show that there is some reluctance or unwillingness by many companies to make meaningful disclosures. Alternatively, it may indicate an ignorance on their part of the potential for making disclosures of an improved quality.

Compare, for example, the Annual Accounts of British Petroleum and Burmah Oil. For the latter, 'oil and gas' are separated from 'other activities' which comprise four sub-activities and in each case sales and profit data are given. In the BP report, the principal activities sales contributions only are disclosed as 'notes on accounts'. The information relates to four activities where 'crude oil' and 'product sales' comprise a single activity. Natural gas sales are given separately. Another example is given in the Directors Report of Tootal Limited 1975/76, where disclosure is made for three activities, namely textile, retail and non-textile operations. The Group Organisation suggests, however, that this disclosure could be doubled to conform with the SIC 3 digit classifications of men's outerwear, ladies' outerwear, retail shops,

made-up textiles, production of man-made fibres, and packaging and printing.

The potential for improved disclosure

i) The SIC Order level as the means of classification

Let us now examine the potential for an improved quality of disclosure in the context of the UK Standard Industrial Classification and isolate more precisely those situations where segmental disclosures are of poor quality and where single class of business disclosure is inadequate. A crucial question relevant to the issue at hand would seem to be whether or not a company's disclosures are consistent with its organisation of business activities and are *also* compatible with an identifiable framework such as that offered by the SIC. Table 8 shows the situation at the *SIC Order level*.

At this somewhat modest level of disaggregation there are 52 companies (67%) whose segmental disclosures are consistent with their supplementary disclosures about the company's organisation. Of the

TABLE 8

Business analysis: Consistency of segmental disclosures with supplementary disclosures about the company's organisation in relation to the UK standard industrial classification

<i>Supplementary Organisational Disclosures of Business Activities</i>	<i>Segmental Disclosures</i>	<i>SIC Order (1 digit)</i>			<i>Total Companies</i>
		<i>Consistent</i>	<i>Partially Consistent</i>	<i>Not Consistent</i>	
<i>SIC Order (1 digit)</i>	<i>Consistent</i>	52 (67%)	8 (10%)	8 (10%)	68 (87%)
	<i>Partially Consistent</i>	—	6	2	8 (10%)
	<i>Not Consistent</i>	—	1	1	2 (3%)
	<i>Total Companies</i>	52	15	11	78 (100%)

remainder there are clearly some offenders but there are also some for whom there is some doubt and difficulty. Of the offenders, there are 8 companies (10%) whose disclosures are only partially consistent with the SIC Order level of disclosure whilst their supplementary organisational disclosures indicate that they could in fact be fully consistent. More serious is the fact that 8 companies (10%) were not at all consistent with the SIC Order level in respect of their segmental disclosures whilst they *could* have been consistent judging from their supplementary disclosures about the organisation of their business activities.

Of the doubtful cases, there are 6 companies which are partially consistent at the SIC Order level in respect of both their segmental disclosures and their supplementary organisational disclosures. There are a number of possible explanations for this which have general application, one of which is that the SIC is not always an adequate reflection of industrial reality in respect of business activity. Another problem is that enough information is not always given by the companies to enable an accurate assessment of consistency, or lack of it, to be made. It can be concluded that overall there is considerable evidence to suggest that segmental disclosures which are consistent with the company's organisation are desirable and feasible at the SIC Order level in the case of 87% of the companies concerned and, that in respect to 67% of companies, there is no apparent disclosure problem at this level of disaggregation; though this leaves many companies with substantial scope for improving the quality of disclosure as it now stands.

An example of satisfactory disclosure at this level is given by the 1975 Annual Report of Thomas Tilling

Limited, which discloses sales and profits data for eleven trade sectors which are consistent with the subsidiary listing and the Directors Report. The trade sectors are identified on a basis consistent with the SIC Order level.

The Annual Report and Accounts of Cadbury Schweppes Limited for 1975 indicate only partial consistency. The disclosure is compatible with the review of operations but this company gives one activity consistent with the SIC Order level and three consistent with the SIC Minimum List Heading level.

On the other hand, the Annual Report of 1975 for the Hawker Siddeley Group disclosed sales and profits data for an activity named Mechanical Engineering and Metals. The SIC Order level treats these under separate headings.

Similarly, Unilever Limited in its Report and Accounts for 1975 disclosed sales and profits for a chemicals, paper, plastics, and packaging activity which at the SIC Order level could be split in three ways.

For those companies making only *single class of business disclosures* Table 9 shows that 13 companies (59%) are *not* consistent with the SIC Order level and yet could have in fact provided consistent segmental disclosures judging from their supplementary organisational disclosures about their business activities.

The S & W Berisford Limited Report and Accounts for 1975, for example, explicitly list six divisions whose operations vary between commodities and meat, and finance and insurance, and a wool division. No disclosure consistent with the Companies Act is made yet each division is basically consistent with an SIC Order. This latter group of companies are

TABLE 9

Business analysis: Consistency of single class of business disclosure with supplementary disclosures about the company's organisation in relation to the UK standard industrial classification

		SIC Order (1 digit)			
Supplementary Organisational Disclosures of Business Activities	Single Class of Business Disclosure	Consistent	Partially Consistent	Not Consistent	Total Companies
	Consistent	7 (33%)	—	13 (59%)	20 (92%)
	Partially Consistent	—	—	1	1
	Not Consistent	—	—	1	1
	Total Companies	7	—	15	22 (100%)

clearly offenders in a serious sense because no attempt has been made to provide analyses when the significance placed on different activities by their own organisation indicates that segmental analyses are relevant at what is surely a modest level of disaggregation. It seems clear then that the general conclusion which holds in respect of companies providing segmental disclosures applies also in respect of those providing only single class of business disclosure. Ninety-two per cent of the companies involved *could* provide disclosures consistent with their own organisation which fall within the framework of the SIC. Distinct from those companies providing segmental disclosures, there is clearly a larger proportion of so-called single class of business companies (59%) which are not providing segmental

disclosures consistent with the SIC at the Order level when this would seem to be both desirable and feasible.

Our examination of the potential for an improved quality of disclosure has concentrated on the applicability of the SIC Order level; but is a more sophisticated and more informative level of disaggregation such as that given by the SIC Minimum List Heading (or 3 digit) level feasible? This is, of course, still a relatively modest degree of disaggregation compared to the level at which statistics are collected by the Government. But in the context of company reporting practice and the obvious complexity of further disaggregation our enquiry here will be limited to a consideration of the SIC 3 digit level of disclosure.

TABLE 10

Business analysis: Consistency of segmental disclosures with supplementary disclosures about the company's organisation in relation to the UK standard industrial classification

Supplementary Organisational Disclosures about Business Activities	Segmental Disclosures	SIC Minimum List Heading (3 digit)			
		Consistent	Partially Consistent	Not Consistent	Total Companies
SIC Minimum List Heading (3 digit)	Consistent	25 (32%)	17 (22%)	18 (23%)	60 (77%)
	Partially Consistent	—	10	3	13 (17%)
	Not Consistent	—	1	4	5 (6%)
	Total Companies	25	28	25	78 (100%)

ii) *The SIC Minimum List Headings as the means of classification*

We are now concerned with discovering whether a company's disclosures which are consistent with its organisation of business activities are *also* within the identifiable framework of the *SIC Minimum List Headings* (3 digit). Table 10 shows the situation in respect to those companies making *segmental disclosures*.

At this more sophisticated level of disaggregation the degree of consistency is reduced with a corresponding increase in the proportion of non-disclosing offenders, and yet many companies *could* in fact be consistent with the SIC judging from their supplementary organisational disclosures about their business activities. An example is given by the 'Shell' Transport and Trading Company Limited Annual Report of 1975 which discloses financial information broadly consistent with the SIC Order level categories. However, a perusal of the 'operations in 1975' section of the report indicates that metals cover tin, lead, zinc and possibly coal, some of which could merit separate disclosure if a 3 digit SIC guideline were adopted.

Despite the reduced degree of consistency overall it can, however, be concluded here that there is considerable evidence to suggest that segmental disclosures which are consistent with the company's organisation are desirable and feasible at the SIC 3 digit level in the case of 77% of the companies concerned – which compares not unfavourably with 87% of companies at the SIC Order level.

Our attention now turns to those companies making only *single class of business* disclosures (see Table 11).

There are 11 companies (50%) which have made

single class of business disclosures which are not consistent with the SIC 3 digit level whilst they could in fact provide consistent segmental disclosures judging from their supplementary organisational disclosures about their business activities. The Chairman's Statement found in Richard Costain Limited's Report and Accounts for 1975 gives, for example, a brief review of the principal operations of the Group. These appear under the headings of UK Contracting, Residential Development, Property, Concrete Products, Mining, Dredging and Overseas Operations. No disclosure consistent with s.17 of the Act is given although some of these activities are compatible with the SIC Minimum List Headings.

The members of this latter group of companies are clearly offenders since their own supplementary organisational disclosures about their business activities bely their purported single class of business. There may of course be appropriate explanations of this with special reference to heavily integrated companies. Companies which identify separate divisions of business may nevertheless coordinate these activities fully so that their individual interaction with external markets is minimal. It is an extremely difficult, if not impossible, task to gauge the degree of coordination between the parts of a company from its annual report. Nevertheless there would seem to be some apparently blatant cases of non-disclosure amongst the 11 companies concerned. For example, the Chairman's Statement in the Rowntree Mackintosh Annual Report of 1975 explicitly mentions the existence of a UK Confectionery Division, a Grocery Division, and a Transport and Distribution Division. Yet no disclosure of business analyses is given.

TABLE 11

Business analysis: Consistency of single class of business disclosure with supplementary disclosures about the company's organisation in relation to the UK standard industrial classification

Supplementary Organisational Disclosures About Business Activities	Single Class of Business Disclosure	SIC Minimum List Heading (3 digit)			Total Companies
		Consistent	Partially Consistent	Not Consistent	
SIC Minimum List Heading (3 digit)	Consistent	4 (18%)	—	11 (50%)	15 (68%)
	Partially Consistent	—	—	6	6 (27%)
	Not Consistent	—	—	1	1 (5%)
	Total Companies	4	—	18	22 (100%)

The investigation carried out here has so far encompassed only one external classification system, that of the Standard Industrial Classification which is used for Government statistical purposes. Such a classification is undoubtedly a somewhat less than perfect reflection, at any one time, of the many complex and changing dimensions of business activity, but it would nevertheless seem to be a useful starting point pending the development of a more appropriate classification system. As mentioned earlier there is another readily available and widely used possibility in the form of the Financial Times – Actuaries Index Classification. An empirical investigation has been carried out in terms similar to those used in connection with the Standard Industrial Classification. The findings of this investigation using the Financial Times – Actuaries Index Classification in essence support those relating to the Standards Industrial Classification and hence are not reported here.⁵

The main reason for this correspondence in findings would seem to be that in many respects the two classification systems overlap and hence can serve as approximate surrogates for each other. But at the same time each of them has features which could usefully be incorporated into the other – at least at the relatively modest level of disaggregation examined in this paper. What we are suggesting is that perhaps an improved classification could be constructed but that this would never be expected to be ideal owing to the dynamic nature of business activity. However, for the purposes of this investigation it would seem that the widely used Standard Industrial Classification is sufficient to make the point that all is not well with segmental disclosures as they now exist. There is clearly scope for improvement in disclosure; and there is also scope for improvement in classification systems. There is also scope, no doubt, for improvement in company organisation in response to its business environment. Thus the question of segmental disclosure raises many related issues of some significance.

Whilst the discussion so far has centred on business analyses and the identification of segments in this context, it is evident that there is an international dimension to the business activities of many companies. It is in this direction that we now turn our attention.

International analyses

The only legal requirement in the UK relating to the

international aspects of business activity is that in the 1967 Companies Act (s.20) concerning the disclosure of exports in terms of turnover. No breakdown by geographical market is required but there is a Stock Exchange requirement relating to international business which is specified in the *Listing Agreement – Companies* (para 9(b)) which requires a geographical analysis of turnover and profit (before tax). This requirement is qualified, however, by the statement that 'A broad geographical analysis of turnover by way of figures or percentages, not necessarily given country by country, will be acceptable' (*Listing Agreement*, note 29). Note, however, that additional information about the principal country in which a subsidiary operates must be disclosed according to para 9(c) whereas the Act requires disclosure only of the country of incorporation. As regards profit results it is stated that 'shareholders should be aware of significant contributions derived from activities carried out in any one territory'.

The lack of precision in such requirements inevitably leaves the extent and quality of disclosure to the discretion of the directors with consequent detriment both to the relevance of the disclosures made and to the scope for inter-company comparability. Problems which can arise in this regard include the question of whether it is the location of the business activities of the company or the markets served by such centres of industry which are being reported upon. Yet it would seem that analyses in both cases could be significant and hence desirable at least in respect of turnover; with perhaps some special reference to exports from *all* locations to *all* markets. The Albright and Wilson Limited Annual Report for 1975, for example, gives geographic data on sales by continent of origin and by destination.

Problems also arise when the disclosure on a country by country basis by some companies becomes difficult to compare with others that make disclosures on a continent by continent basis; and sometimes the categories can become confused and non-interpretable such as where reference is made to activities in Africa and Asia as one area or location. In fact, geographical classification can vary within a single company according to the type of information disclosed. The 'Shell' Transport and Trading Company, for example, gives production data on a mixed country and continental basis, financial information on capital expenditure on a continental basis and chooses to disclose revenue and net income data on an alternative continental basis. Thus in one report (1975) there are at least three categories of geography presented. Another problem of some significance for national efficiency is that concerning the disclosure of UK turnover and profit results as

⁵The analysis employing the Financial Times – Actuaries Index Classification is available on request from the authors

distinct from overseas performance – is such a distinction always discernible? An example of this is contained in the Report and Accounts of BOC International Limited for 1975 where it is impossible to discover UK generated sales and profits because these are included under Europe.

What then is the situation concerning the extent of disclosure of international analyses and the quality of such disclosures? Apparently, the only information currently available is largely concerned with whether or not disclosures are in fact made as opposed to

their quality. Table 12 provides a detailed comparison of the Institute's Survey with the 100 largest companies ranked in *The Times 1000*.

The extent of disclosure gives cause for concern. Furthermore, the situation in respect of those companies actually providing analyses is not totally satisfactory. In the Institute's survey 27 companies (13%) of those giving analyses provided a UK/Overseas analysis only. So did 12 companies (14%) in the largest 100 survey; and a further 9 companies (9%) provided a mixed analysis i.e. turnover/profit analyses disclosed by a mix of either country/continent or UK/Overseas only. This latter aspect is not covered by the Institute's survey because they do not examine the extent of disclosure in any depth, in particular with reference to whether turnover and/or profit analyses are provided. The Dickinson Robinson Group Limited in its Reports and Accounts for 1975, for example, gave a UK/Overseas split of revenues and profits. Elsewhere, in the Notes to the Profit and Loss Account, sales information is given by country but this is not accompanied by compatible profit figures. A similar practice is found in the Report of the Directors of the Plessey Company Limited for 1975. Here the geographical disposition of sales only is disclosed and this is in percentage rather than financial terms.

In the largest 100 survey carried out here the deficiencies of the Institute's Survey are remedied by a more complete investigation (see Table 13).

The provision of a partial analysis only by 17 companies (20%) seems difficult to support since

TABLE 12
International analysis: Segmental disclosures

<i>Disclosure</i>	<i>Institute Survey 1974/75</i>	<i>Largest 100 Survey 1975/76</i>
1. Analysis by Country or Continent	176	66
2. UK/Overseas only	27	12
3. Mixed Analysis	7	9
Analysis provided	203 (68%)	87 (87%)
No Overseas Operations	48 (16%)	1 (1%)
No Analysis Provided	49 (16%)	12 (12%)
Total Companies	300	100

TABLE 13
International analysis: Segmental disclosure by type of analysis

<i>Disclosure</i>	<i>Analysis by Country or Continent Only</i>	<i>UK/Overseas Analysis Only</i>	<i>Mixed Analysis</i>	<i>Total Companies</i>
1. Full Analysis (Turnover and profit)	52	9	9	70 (80%)
2. Partial Analysis (Turnover only)	13	3	—	16 (18%)
3. Partial Analysis (Profit only)	1	—	—	1 (2%)
Analysis provided	66	12	9	*87 (100%)
No Overseas Operations				1
No Analysis Provided				12
Total Companies				100

* 6 Companies also provided an analysis of exports.

TABLE 14

International analysis: Type of segmental disclosure provided in respect of analysis by country or continent

<i>By Country</i>	<i>By Continent</i>	<i>By Continent But Confused Owing to Aggregation</i>	<i>Hybrid of Continent/ Country</i>	<i>Total Companies</i>
5 (7%)	46 (61%)	17 (23%)	7 (9%)	75 (100%)

once an international segment has been identified for the purposes of analysing turnover, for example, what is there to stop an extension to a profit analysis assuming that the location of activities as opposed to markets is the criterion? In fact, information on this latter point is something which is not readily apparent from company reports. But, of course, even if markets were taken as the identification criterion there is little to bar the provision of gross profit margin information though anything more sophisticated would no doubt pose difficulties. However, perhaps the important point here is that information about both aspects would seem relevant to the appreciation of a company's international diversification. Interestingly, 6 companies also provided an analysis of exports by market which goes some way towards meeting such a need. Possibly, what is desirable is an analysis of local and export (by country or continent) performance for each geographical location of the commercial and industrial activities of the business.

There is also an important point here concerning the level of international disaggregation at which companies should make disclosures. Clearly, a single UK/Overseas split, as provided by 12 companies, is inadequate because no assessment of relative risks and returns as between different locations can be made. But what of the nature of analyses provided on the basis of country or continent? The disclosure practices of the remaining 75 companies are set out in Table 14.

The level of disaggregation gives rise to the problems of interpretability and significance but clearly analyses by country and by continent are feasible though the latter is more popular. The continental basis is also less informative though there may well exist problems of complexity for some companies if activities in each country were to be disclosed. However, there would seem to be little excuse for confusing the issue as some companies do by taking the trouble to provide data which have little meaning. Perhaps an explanation can be found in the lack of criteria by which segmental disclosures on an international basis are to be provided.

In the absence of precise criteria for identification it would seem that some attempt must be made here

to evaluate the quality of the international analyses provided by the majority of companies together with an assessment of whether those companies which make only single area of business disclosures are justified in so doing. A useful starting point and exploratory yardstick in this regard would seem to be similar to the approach used in the investigation of business analyses; that is, the international organisation of the company's activities as revealed in other parts of the company report. The question at issue is whether or not the international disclosures made by companies are consistent with their supplementary disclosures about the company's organisation of its international business activities. Are the international analyses provided, or lack of them, consistent with how the company sees itself? Supplementary information about the company's organisation can be gathered from the Chairman's Review and Directors Report; from the listing of subsidiaries which are often grouped by location; and from other sundry data such as organisation charts, product data, managerial responsibilities, and so on, which are sometimes provided.

Are the disclosures made, whether on a segmental or single area basis, consistent with a company's supplementary organisational disclosures? It would seem from this investigation that this is not usually the case (see Table 15).

An example of inconsistency is afforded by the 1975 Annual Report of Great Universal Stores Limited which gives a UK/Overseas split in respect of turnover and profits. The Chairman's Statement, however, indicates that Canadian, South African, Australian, French and Dutch subsidiaries exist.

It can be observed that a large proportion of companies are providing information which is not consistent with how they see their own international business activities judging from supplementary disclosures in their company reports. If the significance placed on international activities by the company's disclosed international organisation is not matched by its disclosures then users are certainly being deprived of significant and hence relevant information. Surely there can be no question that what managers perceive as important is of concern to

TABLE 15

International analysis: consistency of segmental disclosure with supplementary disclosures about the company's organisation

<i>Segmental Disclosure</i>	<i>Supplementary Disclosures About the Company's Organisation</i>							
	<i>Chairman's Review/Directors Report</i>				<i>Grouping of Subsidiaries</i>			
	<i>Consistent</i>	<i>Not Consistent</i>	<i>No Information</i>	<i>Total Companies</i>	<i>Consistent</i>	<i>Not Consistent</i>	<i>No Information</i>	<i>Total Companies</i>
Full Analysis (Turnover and Profit)	23	26	21	70	14	37	19	70
Partial Analysis (Turnover or Profit only)	4	6	7	17	1	7	9	17
Analysis Provided	27	32	28	87	15	44	28	87
No Overseas Operations				1				1
No Analysis Provided				12				12
Total Companies				100				100

TABLE 16

International analysis: Consistency of single area of business disclosure with supplementary disclosures about the company's organisation

<i>Chairman's Review/Directors Report</i>				<i>Grouping of Subsidiaries</i>			
<i>Consistent</i>	<i>Not Consistent</i>	<i>No Information</i>	<i>Total Companies</i>	<i>Consistent</i>	<i>Not Consistent</i>	<i>No Information</i>	<i>Total Companies</i>
—	7 (58%)	5	12	—	7 (58%)	5	12

external users also? Furthermore, lack of disclosure must mean that the covariances of performance as between locations of output or markets will not be assessable with the consequence that risks and returns on an international basis cannot be fully appreciated.

We now turn to consider the companies which provide only *single area of business disclosures*. Table 16 shows that in respect of none of these were single area disclosures clearly consistent with supplementary disclosures about the company's organisation, although for five companies there was insufficient information to make an assessment.

An interesting example of non-disclosure is provided by the Peninsular and Orient Steam Navigation Company's Annual Report and Accounts of 1975. The list of principal subsidiaries shows that three are incorporated in the USA, six in Australia, twelve in EEC countries and several other countries are also stated. Despite the fact that the statement preceding the list predicates that these subsidiaries materially contribute to the results and assets of the Group in these accounts, no geographical disclosure about sales or profits is given. But the supplementary disclosures provide a much more telling criterion of significance, that is, one arising out of management's own actions.

A final point here concerns an aspect of crucial importance for matters concerned with improving the performance of the national economy and for informing users of the success of UK performance relative to overseas performance. This latter aspect is important to investors especially with regard to the question of international diversification of their portfolios. Table 17 shows that UK performance can be distinguished from overseas performance for both turnover and profit only in the case of 52 companies.

TABLE 17

International analysis: Disclosure of UK performance as distinct from overseas performance

1. Both Turnover and Profit	52
2. Turnover only	16
3. Profit only	—
4. Not Distinguished	31
5. No Overseas Operations	1
Total Companies	100

Such a lack of information does not seem supportable when knowledge of UK performance is of such current concern.

Conclusion

In the context of the segment reporting issue, the quality of disclosure investigated in this paper relates mainly to the consistency and compatibility of the basis of disclosure used with other available information in an individual company's report. The fundamental question has been 'does the disclosure accurately reflect the scope of the business and international operations of the individual company?' Based on our empirical survey of company reports published by the largest 100 UK quoted industrial companies for 1975/6, it would appear on balance that a finding in the negative is appropriate. A problem of identifying separate classes of business, and of international operations, would seem to exist.

The importance of this finding should not be underestimated. Arguments about the reliability, objectivity and verifiability of specific financial information disclosed for segments of a company are largely redundant if those segments are identified on a haphazard basis. Conscious manipulation or inadvertent discrimination in the selection of segments for disclosure purposes can render the financial data provided meaningless. This is because the different rates of profitability, growth and risk attaching to different parts of a company can be disguised in the process of identifying segments.

Our work to date has attempted to identify with

some precision the nature and extent of the problem in practice. It clearly suggests that neither the 1967 Companies Act nor the Stock Exchange Listing Requirements are effective in securing disclosures by segments from UK companies. That is, the interested reader of annual reports may be bemused by the non-disclosure of certain companies or confused by the disclosure provided and the information found elsewhere in the reports of other companies. Where a company having seemingly diverse activities is run as an integrated concern, non-disclosure may be justified but if no information is given about this mode of operation, confusion and possibly mistrust is likely to be generated.

It would be wrong to attach our criticisms to all of the companies in the survey. Several present information which is compatible with that found in the Chairman's Statement, Directors Report, Subsidiary Listing or organisation chart. A few companies provide information in excess of that required by law and the Stock Exchange. For example, the Tube Investments Limited Annual Report of 1975 gives total capital employed and one year's comparative analysis for the eight classes of business identified.

Our concern lies in the *range* of disclosure practices employed by British companies. Our findings suggest that future research should be directed towards the means of identifying separate classes of business or segments and to the development of guidelines which will provide useful and reliable information for interested users but without constraining corporate managements by the imposition of a rigid and arbitrary set of rules.

Analysing Project Cost Escalation: the Case Study of North Sea Oil*

J.A. Likierman

In June 1975 the Government set up a Study Group 'to make recommendations to Government for action . . . to prevent or reduce escalation of the costs of offshore oil and gas operations on the UK Continental shelf'. This paper is not concerned with the findings of the study¹ but with the way in which the Study Group had to define escalation, measure it and analyse its causes. The problems encountered by the Study Group are central to many of the issues in the post audit field and it is hoped that an outline of the methodology and conceptual framework developed for use in the study will be useful for discussion on the distinction to be drawn between post-audit of 'first-time' projects such as the development of a North Sea field, and other post audit work.

The context

To put the study into its context, it is worth briefly giving the background against which the Study Group started work.

Major gas fields were discovered in the southern basin of the North Sea between 1965 and 1972, following the granting of the first licences to explore in 1964 and 1965. These finds were a useful addition to the UK's energy supplies in the sixties, but it was not until 1970 that the first major oilfield was discovered in the British sector of the North Sea after additional licences had been granted for exploration. By June 1975 the first oil was already coming ashore and a total of 14 fields had been declared 'commercial', that is, worth developing. All these were in the northern basin. The quadrupling of the oil price in 1973/74 had of course made a major impact on the economics of development but it became clear that costs of developing new finds in the northern basin were also rising very fast. Conditions were certainly worse in the northern basin than in the southern in terms of water depth, wave height and weather but a large number of other reasons for the cost increases were given by those participating in development. The government, management and workers were each

blamed in turn and the Study Group started work to try and establish the facts and if necessary recommend suitable government action.

Defining escalation

The first finding was that the term escalation appeared to be frequently used without agreement as to what exactly it meant. 'Cost increases' or 'rise in costs' would each seem to be perfectly adequate to describe the phenomenon of costs going up. Use of 'cost escalation', however, appeared to have, at least by implication, a different dimension: that of the unexpected or exceptional. This search for an adequate definition was important not as a matter of semantic accuracy but to establish clearly that the element which distinguishes a rise from escalation was the *unanticipated* element of increase. Such confusion over definition was found to be the origin of a number of apparently contradictory statements.

To complete its definition, the Study Group identified four different ways in which the term escalation was used:

- 1 Difference between the original estimate of total final cost and the actual final cost.
- 2 Difference between the original estimate of total final cost and the latest estimate of total final cost.
- 3 Difference between the last two estimates of total final cost.
- 4 Rise in costs of individual cost elements, regardless of whether purchases are made or not.

Again it was found that confusion between these uses could often lead to different assumptions about the kind of action necessary to avoid future escalation. Only under (1) above is the actual final cost of the whole project known. In (2) and (3) the difference is between estimates which may in turn require revision. Yet in few cases was a distinction clearly made between (1) and (2). The statement 'Costs have escalated from £700 million to £1200 million' was often shorthand for either 'The original estimate was £700 million but the final actual cost has turned out to be £1200 million' or 'The latest estimate of final cost, £1200 million, is £500 million higher than the first estimate'. Similarly in (3) 'The latest estimate is £100 million higher than the last estimate' tended to be shortened to 'Costs have escalated by £100 million'.

*The author was a member of the Study Group which is the subject of this article. The views expressed are, of course, his own.

¹*North Sea Costs Escalation Study*. Department of Energy, HMSO, 1976.

In each of these cases, therefore, the impression given by use of these imprecise statements was that known costs had risen. The point hardly needs to be made that budget/actual comparisons of any sort can hardly be treated in such a cavalier manner. In (4) confusion was found to be of a different kind. The statement 'The cost of steel has escalated from £400 per tonne to £700 per tonne' might either be a statement about the cost of an input used for a particular project or a purely rhetorical point on the rise in the cost of steel even if there was no intention to buy such steel.

The Study Group's definition of escalation for a project was:

The difference between the original estimate of final cost of a project and the final out-turn cost or latest estimate of the final cost.

This definition of course excludes any rise in input costs which was anticipated in the original estimate, and cannot therefore be used to describe absolute levels of cost increase over time for identical projects. Thus it can be said that the construction cost of a 'standard' factory has risen from £10 per square foot to £15 per square foot, but not that it has escalated from £10 to £15 per square foot unless the increase was unanticipated.

The relationship between the definition of escalation and a rise in input costs is best illustrated by a breakdown of cost increases into three elements:

(a) *Anticipated increase in input costs (AIIC)*

This element included the initial assumptions about input cost increases from the date at which the initial estimate is made and therefore forms part of the base estimate.

(b) *Unanticipated increase in input costs (UIIC)*

This occurs when the actual rate of cost increase is

greater than the estimate. Causes might include unanticipated increases in labour or materials costs or unanticipated cost increases due to exchange rate movements. A 'decrease' is also possible of course, if the initial estimate was too high. It is evident that this decrease is chimerical – the initial estimate was simply incorrect – just as the 'increase' is a manifestation of the estimate being, with the benefit of hindsight, incorrect the opposite way.

(c) *Unanticipated increase in the quantity of inputs (UIIQ)*

There are a number of reasons for unanticipated increases in the quantities of inputs for a project. First there are almost certain to be inaccuracies in cost input estimates for first time projects, even if the scope of the task does not change from first estimates. Second there may be changes in project scope arising from greater knowledge about the task, or as a result of decisions which deliberately change the scope. Lastly there may be changes arising from external constraints, e.g. new regulations on safety or pollution which impose increased costs.

The Study Group defined inflation specific to the project – the anticipated and unanticipated increase in input costs – as (a) plus (b), and project escalation – the unanticipated increase in the cost or quantity of inputs – as (b) plus (c).

Measurement

The methodology used by the Study Group for the measurement in percentage terms of the effect on total final cost of the three elements, AIIC, UIIC and UIIQ described above is shown in Exhibit 1.* The

*Theoretical figures are used in this section because of the need to respect confidentiality.

EXHIBIT 1

	1	2	3	4
Year	£	£	£	£
1	20	$20 \times 100.00\% = 20.000$	$20 \times 100.00\% = 20.000$	$20 \times 100.00\% = 20.000$
2	20	$20 \times 110.00\% = 22.000$	$20 \times 120.00\% = 24.000$	$20 \times 120.00\% = 24.000$
3	20	$20 \times 121.00\% = 24.200$	$20 \times 144.00\% = 28.800$	$30 \times 144.00\% = 43.200$
4	20	$20 \times 133.10\% = 26.620$	$20 \times 172.80\% = 34.560$	$30 \times 172.80\% = 51.840$
5	20	$20 \times 146.41\% = 29.282$	$20 \times 207.36\% = 41.472$	$30 \times 207.36\% = 62.208$
	<u>100</u>	<u>122.102</u>	<u>148.832</u>	<u>201.248</u>

Figure 1. The Study Group's Method

UIIC	£26.7	£52.4
AIIC	£22.1	
	£100.0	
		UIIQ

Figure 2. An Alternative Calculation

UIIC	£39.0	£40.1
AIIC	£22.1	
	£100.0	
		UIIQ

use of percentages in the analysis which follows reflects the Group's wish to express the results in percentage terms, rather than as money quantities. The first column shows the cost profile for a five-year project with a breakdown of the anticipated costs at today's prices. The second column shows how a 10% input cost increase has been assumed for years 2 to 5, giving the estimated initial cost. The third column extends the analysis to show the effect of an additional, unanticipated increase in the input costs for years 2 to 5. Finally the fourth column shows the effect of under-estimating the quantity of inputs required by 50% in years 3 to 5.

The results of the analysis in Exhibit 1 are as follows:

$$\begin{aligned} \text{AIIC} &= \frac{\text{Col 2}}{\text{Col 1}} = \frac{£122.102}{£100.000} = 22.1\% \\ \text{UIIC} &= \frac{\text{Col 3}}{\text{Col 2}} = \frac{£148.832}{£122.102} = 21.9\% \\ \text{UIIQ} &= \frac{\text{Col 4}}{\text{Col 3}} = \frac{£201.248}{£148.832} = 35.2\% \end{aligned}$$

This gives the project inflation and escalation elements as follows:

$$1.221 \times 1.219 \times 1.352 = 2.012$$

$$1.221 \times 1.219 = 1.488 \text{ (48.8\% project inflation)}$$

$$1.219 \times 1.352 = 1.648 \text{ (64.8\% project escalation)}$$

Figure 1 shows these relationships graphically in money terms by means of traditional variance analysis.

An alternative calculation is shown in Exhibit 2 and graphically in Figure 2. The sum of AIIC, UIIC and UIIQ is by definition the same as in Exhibit 1.

$$\begin{aligned} \text{AIIC} &= \frac{£122.102}{£100.000} = 22.1\% \text{ (As Exhibit 1)} \\ \text{UIIQ} &= \frac{£162.153}{£122.102} = 32.8\% \\ \text{UIIQ} &= \frac{£201.248}{£162.153} = 24.1\% \end{aligned}$$

EXHIBIT 2

	1	2	3	4
Year	£	£	£	£
1	20	$20 \times 100.00\% = 20.000$	$20 \times 100.00\% = 20.000$	$20 \times 100.00\% = 20.000$
2	20	$20 \times 110.00\% = 22.000$	$20 \times 110.00\% = 22.000$	$20 \times 120.00\% = 24.000$
3	20	$20 \times 121.00\% = 24.200$	$30 \times 121.00\% = 36.300$	$30 \times 144.00\% = 43.200$
4	20	$20 \times 133.10\% = 26.620$	$30 \times 133.10\% = 39.930$	$30 \times 172.80\% = 51.840$
5	20	$20 \times 146.41\% = 29.282$	$30 \times 146.41\% = 43.923$	$30 \times 207.36\% = 62.208$
	100	122.102	162.153	201.248

giving project inflation and escalation elements of

$$1.221 \times 1.328 \times 1.241 = 2.012$$

$$1.221 \times 1.241 = 1.515 \text{ (51.5\% project inflation)}$$

$$1.328 \times 1.241 = 1.648 \text{ (64.8\% project escalation)}$$

This alternative shows how UIIQ is calculated on the basis of anticipated input costs only. The UIIC element is then calculated for anticipated *and* un-anticipated input quantities. Figure 1 shows the results in money terms through variance analysis, the difference between Figures 1 and 2 being the ambiguous status of the covariance of £12.3.

In compiling cost profiles of the type shown in Exhibits 1 and 2 it is always necessary to distinguish between analysis of anticipated increases before completion of the project and analysis of actual increases after the project has been completed. In year 6 of the project just described, it will be possible to obtain figures which show the relationship between the original cost estimate and the actual final out-turn cost. In year 4, however, the analysis will involve a combination of the actual costs to date (often at that stage data will only be available up to the end of year 3 or even year 2) and a projection for the rest of the project. In year 4 it is still uncertain what remaining input costs will be (unless forward purchases have already been made); whether additional input quantities will be required; and whether the project will finish in year 5.

Other things being equal, there will tend to be a 'slowing' of the rate of change of final estimate costs as the proportion of known to unknown costs rises and the level of uncertainty diminishes as the time horizon shortens before project completion.

The consequences of failure to distinguish between differences in estimates and the difference between estimated and actual costs has already been discussed. An excellent example is the analysis of the rise in the estimates of final development costs for Concorde.² After the embarrassment of very large increases in estimated costs between 1962 and 1972, the French partners made an estimate in 1973 which was 'conservative' for the final out-turn cost.³ Escalation therefore was seen to have been 'high' between the 1962 and the 1973 estimate and 'low' between 1973 and the next estimate made in 1975.

Comparing escalation

The Study Group's detailed terms of reference included the requirement 'to determine what have been the main trends in costs, in relation to appropriate national and international indices'. At first it was hoped to compile a North Sea cost index to measure the costs of a 'typical' field over time. As it became clear that no typical field existed, this approach was not pursued. It might indeed have been possible to construct an entirely synthetic set of costs in the same way as refinery costs are accepted to be measured by the Nelson index⁴ but it was felt that variations between fields were so great that little useful purpose could be served by doing so. Faced with the task of

²Sixth and Seventh Reports from the Committee of Public Accounts. Session 1972-73. 'Development and Production of the Concorde Aircraft'. HC 335 and HC 353. HMSO, 1973.

³Written Answer on 24.3.1975 to Parliamentary Question by Mr. Terry Walker. Hansard fifth series, vol. 889. Session 1974-75, cols. 54, 55, 56.

⁴*Oil and Gas Journal Weekly*. [Index published in the first issue each month. Petroleum Publishing Company. Tulsa, Oklahoma, 74101.]

putting the North Sea experience into the context of world and national trends, it was decided to look at cost trends of development elsewhere in the world, at national indices and finally at the trends in comparable costs elsewhere in the economy.

Comparisons were first made with the Gulf of Mexico, an offshore oil production area with relatively well-documented cost data. It was soon clear, however, that meaningful comparisons with experience in the North Sea were not possible. The Gulf of Mexico is an established offshore area with relatively shallow water and benign weather conditions. Cost movements are those of the major inputs – steel, concrete construction, labour and so on – with sufficient similarity between new and existing development for cost trends to be identifiable. The North Sea on the other hand is characterised by very deep water, some of the most ferocious weather in the world, and fields with widely differing geological characteristics. If cost comparisons were to be made, it was not clear what conclusions could then be drawn.

Next, the trend of estimates for the Alaskan North Slope was considered as a possible basis for comparison. This is not an established field and is also breaking ground technologically since oil has never before had to be extracted with such low temperatures. Once again comparison appeared to be inappropriate. The fact that costs of coping with new extremes of cold differ from costs of coping with new extremes of bad weather and deep water provides an interesting but not a useful comparison for the analysis of causes.

The fields in the Norwegian sector of the North Sea alone seemed to provide the basis of comparability to cost experience in the British sector. The environmental conditions were similar, the influences on input costs could be isolated and the time scale for development of the two sectors was moving in parallel. It was therefore disappointing to find that the Norwegian fields were characterised by highly specific geological factors that made the changes in estimates of final cost unsuitable for comparison with the British fields. A 'typical' field existed as little in the Norwegian as in the British sector.

The absence of the basic precondition for comparison – a reasonable degree of similarity – was as evident when general indices in the economy were examined. Statements in the press about the rate of increase in costs tended to make comparisons with the retail price index. Even the more sophisticated commentators used the wholesale price index or the index of construction costs. As in any other case, the very generality of these indices made comparison with the particular pattern of project costs of very limited value.

Faced with the difficulties of establishing comparability for the project as a whole, trends in the costs of individual inputs for North Sea work – in particular those for labour and materials – were examined to see how these compared to the cost trends for similar inputs used elsewhere in the economy. Some broad brush comparisons were possible as a result, but little of real value emerged from the investigation. This was partially because there was no typical mix of inputs for individual fields so that the comparisons had to be made on a field-by-field basis, but mainly because, as before, any index was too general. For example, there are indices of wage rates and labour costs for the manufacturing sector and for construction. However, the labour used in a platform-building yard is subject to very specific influences arising from location and the nature of the work. The index of steel costs is similarly a composite of the price movements of many types of steel. Costs of the specialised steels used on much of the North Sea work are a small part of the index and are subject to highly specific cost influences.

The report included some general conclusions drawn from available data but these were of a highly tentative kind and reflected the Study Group's concern that misleading comparisons might well be drawn from illegitimate comparisons in conditions where many were all too keen to attribute blame. In a different context it might indeed not be unreasonable to compare cost increases with a much more general index to identify the escalation due to factors particular to the project.

In only one area of comparison did the Study Group draw stronger conclusions. Other major projects which were complex and broke new ground technologically were examined and it was found that cost experience on the Advanced Gas Cooled Reactor programme and Concorde, for example, appeared to have much in common with cost experience in the North Sea. An absence of prototype development and the lack of precise definition of the task before work commenced did appear to be related to high subsequent rates of increase for cost estimates. The Downey report on the cost of defence projects gave much the same story.⁵

Analysing causes

The Study Group found that analysis of causes, as opposed to the extent of escalation, gave rise to

⁵Vol. 1. 'Development Cost Estimates'. Report of the Steering Group. SBN 11 470062 1. Ministry of Technology, 1968.

Vol 2. Handbook of Procedures. 'Programming, Estimating and Control of Development Projects'. SBN 11 470063 X. Ministry of Technology, 1968.

fascinating if intractable problems of giving weight to the apparently contradictory statements made by the various parties involved in the North Sea. As an example, the operator of the field, acting as 'manager', often argued that inadequate performance by contractors was responsible for the cost over-run. The response of the contractors to such charges was to blame inadequate initial specifications and subsequent changes in specifications by the operators.

It was perhaps inevitable that without an established standard for comparison, and with expenditure of up to £1,500 million to develop the largest fields, stories should circulate giving a large variety of reasons for the huge and apparently inexorable rise in estimates.

The Study Group found that the same stories, magnified by repetition, tended to move from the specific to the general. A rise of 150% in the rates paid by one operator for a pipe-laying barge at a time of critical shortage of large capacity might be magnified through rumour to a 250% rise in all costs and it might be then assumed that the forces of supply and demand were responsible for the whole of the cost increases for a particular field. The fact that the costs of hire were a relatively small part of the total cost and that the market for such craft was at that time highly imperfect were often ignored in the understandable enthusiasm for finding the 'Cause'.

The commonest causes attributed included:

- a General inflation
- b Government interference
- c Devaluation of sterling
- d Cost increases in labour, materials and services
- e Excess demand for labour, materials and services
- f Technical inexperience
- g Inadequate initial specifications
- h Design changes during construction
- i Inadequate performance of suppliers
- j Low labour productivity
- k Poor project management

Some of these causes are of course closely and even causally connected. But the factor which is common to all the listed causes (taking out (a) to (c) as more general) is their close connection to the difficulties of initial estimation. 'Low labour productivity' was frequently cited as a significant factor causing cost escalation, and the sight of men not working on production sites appeared to give weight to the contention that the labour force was performing inadequately. Yet not only might inadequate initial specifications, design changes during construction, inadequate performance of suppliers or poor project management be equally responsible for the lack of work on site, but the very description 'low productivity' itself implies a standard. With little basis for

setting the estimate and significant variations from field to field, no such standard was available.

Each of the attributed causes was exhaustively researched and as a matter of record it was found that virtually all the escalation in the 18 months period to April 1975 had been due to the unexpected increase in input quantities.

The report concluded that 'the escalation is best considered as a manifestation of the difficulties of managing, to a short time scale, the design, resourcing and fabrication of novel and complex structures and installing and commissioning them in a hostile environment'. While some very specific causes of unexpected increases in costs were found and some evidence of poor performance, there was little question that much of the increase in estimates was perhaps an inevitable consequence of undertaking a first-time project with a significant proportion of unknown factors.

Post audit implications

The government's interest in examining cost escalation in the North Sea was very specifically related to its concern about the possible impact on the country's economic future. Arising from the study, a question worth examining is whether such a post audit is worthwhile from a company's point of view for a first-time project. The study was not a full post audit because the revenue streams for any North Sea field will not be known for many years. But the considerations which apply to the post audit of costs alone are similar to those applicable for a full post audit in terms of the differences between first-time and other projects.

Pflomm⁶ gives four major purposes for the post-completion audit:

- '1 To verify the resulting savings or profit
- 2 To reveal reasons for project failure
- 3 To check on soundness of various managers' proposals
- 4 To aid in assessing future capital expenditure proposals.'

There is a strong argument for suggesting that the more unique the experience of such a project, the less purpose does an extensive post audit serve. In the case of the North Sea, if a company is involved in the development of a number of fields, the cost experience of one field may well be applicable to the next. But such experience will be of use only if there is a

⁶*Managing Capital Expenditures*. Studies in Business Policy No. 107, National Industrial Conference Board, 1966.

reasonable degree of similarity between the fields. This does not mean that there should not be extensive analysis of the reasons for the difference between the original assumptions and actual costs. Nor does it mean that there should not be the strictest supervision of costs and a reassessment of the funds required for completion as part of the normal process of management control. If, however, the original estimates were subject to very wide degrees of potential error, the lessons to be learnt from a post audit as part of a regular system may be very limited.

The process of checking should nevertheless be regarded as an essential discipline so that trends in under- or over-estimation can be identified. Discipline cannot be imposed by such a method alone since responsibility cannot be attributed with certainty from comparison with a 'guesstimated' base. A counter reason for the difference from estimate can always be brought forward. Further, the factors

which result in under- or over-estimation are not likely to be similar for a series of first-time projects. Nevertheless if there is a record of consistency one way or the other, the reasons are probably to be found in personal optimism or pessimism among the estimators, deliberately low estimating to obtain Board sanction or deliberately high estimating as a means of personal protection in the control process. The post audit mechanism is an important means of revealing or avoiding these.

If by post audit is meant a formal procedure for the identification of causes for increases in cost, then some reasonable standard is necessary. The absence of such a standard for many first-time projects brings the post audit of costs for these projects into question. If it is the systematic monitoring of progress against assumptions, then post audit must be an important part of the discipline of a company's control process.

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'The History of Accounting': Three Reviews

T.A. Lee, L. Goldberg and Trevor Johnston

Auditors: Their Duties and Responsibilities, F. W. Pixley, Effingham Wilson, London, 1881. Reprint Edition, Arno Press, New York, 1976. US \$14.

Accounting: in Theory and Practice, G. Lisle, William Green and Sons, Edinburgh, 1900. Reprint Edition, Arno Press, New York, 1976. US \$25.

Auditing: Theory and Practice, R. H. Montgomery, The Ronald Press Co. Ltd., New York 1912. Reprint Edition, Arno Press, New York, 1976. US \$40.

One can almost begin this review with the preface 'There was an Englishman, a Scotsman, and an American'. For in these three classic accountancy texts can be seen the attitudes, experiences and work of three very distinguished accountants, each of whom contributed greatly to accounting and auditing practices at the end of the nineteenth and beginning of the twentieth centuries.

Pixley was one of the earliest members of The Institute of Chartered Accountants in England and Wales; Lisle, a Scottish Chartered Accountant, was a well-known lecturer on accountancy matters at Heriot-Watt College, Edinburgh; and Montgomery, a Certified Public Accountant, was one of the leading American practitioners and lecturers of his day. Their books have been reprinted in the Arno Press series on the history of accounting and thus are now widely available to today's students and scholars.

As this review will reveal, there appears to be very little that is entirely new in accountancy, for many of the problems which now face accountants in the area of financial reporting were being discussed by these early writers. It is therefore not the intention in this paper to outline and criticise in detail the nature and content of these three books. Instead, they will be examined as pieces of history, with a major emphasis on the extraction of points of either similarity or dissimilarity with accountancy practice today. This, one hopes, is what they will be used for in any case by their readership over the years to come.

Finally, before proceeding further, it should be noted that each of the authors was a leading practitioner of his time and, much more than can ever be the case today, was representing in print what he believed to be the best practices then existing.

Contemporary textbooks, by contrast, tend not to mirror best practice but, instead, to portray the possible practices of the future. The three books being reviewed therefore provide their readers with an idea of the type of accounting and auditing which was being practised by leading practitioners in the late 1800s and early 1900s.

Accounting as a science

Nowadays, accounting measurements are regarded as relatively frail and imprecise data, derived from a mixture of fact and subjective (albeit expert) judgment. Although Pixley made no such reference, both Lisle and Montgomery felt obliged to state explicitly that accounting was a science. Lisle, for example, referred to it as a 'progressive science' and wrote in his preface:

'An attempt has been made to define as exactly as possible the various terms used in accounting. Many of these terms are employed somewhat loosely, and this is most undesirable in a science which is an important branch of applied mathematics.'

Montgomery, too, had this to say of accounting (p. 1):

'A scientific system of accounts is a method whereby a graphic and intelligent record of facts may be assembled and by logical processes reduced to readable form.'

One or two very important points can be deduced from these quotations, each of which has relevance to financial accounting as it is now practised:

(a) Accounting is not and, except in its most basic cash flow form, never has been a science. What these early writers were confusing was the overall function of accounting (involving allocation and valuation) with the measurement tool of bookkeeping (which is factual and can be used according to universally known and accepted rules). It is bookkeeping which, in a general sense, can be described as scientific and mathematically based. Accounting, on the other hand, has no such derivation. Unfortunately, this is not generally appreciated by non-accountants (or even by some accountants), and it has therefore been the case in recent years that widespread surprise has been expressed when the subjectiveness of published

accounting figures has been the cause of debate. Judged by the content of the three books under review, the origins of this confusion appear to be relatively old and deep-seated.

(b) The major emphasis on the rules of book-keeping, rather than the nature of the frailties of accounting allocations and valuations, is evident in each book. All three authors spent a considerable portion of time explaining the detail of books of account and bookkeeping procedures, even if the text is essentially about auditing. For example, Montgomery described the position thus (p. 24):

'The first important qualification of the professional auditor is a thorough knowledge of practical accounting, which necessarily embraces a complete mastery of bookkeeping. Bookkeeping is so readily learned by any one of ordinary intelligence that it is the most elementary step in the auditor's career.'

Statements such as the above led to a great deal of dogmatic instruction as to how to account and audit, with very little conceptual explanation or questioning, and this is evident in all three texts. This approach to financial accounting is obviously changing nowadays but it is still to be seen in many teaching courses on the subject.

(c) Both Lisle and Montgomery in their quotations on the science of accounting emphasised the comprehension aspect of accounting – that is, accounting terms should be defined, and accounting messages should be readable. Certainly, each of the three authors attempted to follow these principles as best he could. For example, Lisle made the following important definitions:

(i) Profit (p. 48)

'Profit consists of the surplus remaining over from the employment of capital after defraying all the necessary expenses and outlay incurred in its employment, and after the capital has been replaced or provision made for its replacement. If there are not sufficient assets left to replace the capital, the result of the venture or employment is loss.'

(ii) Capital (p. 68)

'The capital of a business concern at a particular moment of time may be defined, for purposes of accounting, as the surplus of the assets of the concern over the liabilities to the creditors of the concern.'

Both definitions will be examined in greater detail in the next section but, at this stage, each can be criticised for its vagueness and descriptive approach. However, at least they represent attempts to introduce meaning and conceptualisation to accounting terms, a matter which is surprisingly still neglected in a number of modern textbooks. Likewise, Mont-

gomery's comment on readability is frequently ignored by accountants today – the main emphasis (as at the turn of the century) being on measurement problems to the virtual exclusion of those on comprehension.

Income and value measurement

As was the case until very recently in the UK and elsewhere, the problems of income and value measurement appear to have been virtually disregarded by the earliest accountancy practitioners. In fact, on the basis of a reading of the three books under review, little or no attention appears to have been paid to such matters as the valuation of assets, the determination of capital increments and decrements, and the recognition of periodic income by means of a capital maintenance decision. (Although Montgomery was aware that a problem existed – as will be mentioned below.)

The previously quoted definitions of income and capital by Lisle are, in fact, as far as these particular authors went – no indication being given as to what was meant by replacement of capital and in which price terms this was to be measured. In addition, the defining of capital by way of a vague description of net assets is not to be regarded as something only for the history books. It can still be seen in numerous modern textbooks as well as in taught courses in accounting.

Certainly, so far as income and value matters were concerned, each of the authors paid very little attention to them beyond giving descriptions (always in historic cost terms) of how to implement the bookkeeping required for the various assets concerned. For example, Pixley's major contribution to the problem of stock valuation was (p. 126):

'Stock left in the possession of the Company at the date on which the books are closed, that is, of the unsold portion of the purchases of the period, and perhaps of the Stock in hand included in the debit side of the account.'

He went on to say that the auditor could not be held responsible for the value assigned to the stock. Lisle, too, gave very little explanation regarding the stock problem, limiting it to double-entry descriptions covering little more than two pages (pp. 52–55). Montgomery, on the other hand, devoted ten pages to stock and its verification, placing considerable emphasis on the need to evidence and verify values placed on it by management. He did not, however, discuss the significant flexibility involved in measuring stock data for reporting purposes.

Finally, with regard to the question of income, and the fact that its measurement has always been a problem (although it may not always have been

acknowledged), the words of Montgomery give cause for reflection (p. 181):

'In view of the fact that there is scarcely any likelihood that two professional auditors today would, with respect to the accounts of an undertaking of any considerable magnitude, show the same net result of profit, it is not surprising that the usual profit and loss account is prepared upon a basis which admits of criticism. It is extremely important that an effort be made to establish standards which will appeal to those responsible for the stating of accounts as scientific and reasonable.'

Shades of Chambers, Spacek, Stamp, *et al*! We are still trying to find these standards through the work of organisations such as the Accounting Standards Committee and the Financial Accounting Standards Board. But, in the UK, it took nearly sixty years to recognise that a problem did exist.

Descriptions rather than explanations

It is a relatively common complaint today that financial accounting courses and textbooks tend to concentrate too much on 'how to do it' rather than 'why do it'. In other words, there is criticism of the traditional approach to accountancy matters of describing things instead of explaining them. Such an approach is not new and can be seen to be flourishing in each of the three review texts. For example, Pixley's text mainly contains descriptions of the various enactments then governing companies and their financial statements, with little or no guidance as to how to verify the various items he carefully outlines in these statements. Similarly, Lisle described various accounting and bookkeeping procedures without further explanation. Only in Montgomery is there any real attempt at trying to explain why auditing was conducted in the way it was in the early 1900s (pp. 17-23, inclusive).

The lack of explanation regarding the scope and aims of financial accounting and auditing has only recently been rectified in the UK and elsewhere. Therefore it should not be taken as criticism only of the work of the early accounting practitioners; nor should the present interest in the specific objectives of financial reporting be regarded purely as the prerogative of the accountants of the 1970s. For example, Montgomery had this to say of the purposes of auditing (p. 9):

'The relative position of the present-day purposes are:

1. To ascertain the actual financial condition and earnings of an enterprise for
 - (a) Its proprietors (partners or stockholders);
 - (b) Its executives (managers, officers, or directors);

(c) Bankers or investors who are considering the purchase of securities;

(d) Bankers who are considering the discounting or purchasing of its promissory notes.

2. The detection of fraud or errors as hereinafter explained.'

In other words, he did recognise a multi-purpose function, with several groups of interested report users. Unfortunately, he did not develop this statement much further.

How quickly things change

The total period which the three books covers is little more than thirty years, yet in that time the degree of change was considerable so far as financial accounting and auditing were concerned. This casts doubt on the popular conception of change taking place at the turn of the century at a much slower pace than is now considered usual. The professional accountancy bodies were set up in the latter half of the nineteenth century; corporate activity began to expand at a rapid rate as the benefits of the Industrial Revolution were commercialised; and financial institutions quickly developed as a consequence. It was inevitable, therefore, that accountancy would require to keep pace. The following examples, taken from the three books under review, may help to explain this point: (a) Pixley published his book in 1881, and devoted its contents to descriptions of the various enactments governing the behaviour of companies (particularly the Companies Act 1862). At this time in the UK, there were few legal requirements regarding audits, and many auditors were shareholders with little or no accounting experience. Although this was deplored by Pixley (pp. 151-3), he did little to advance the need for qualified auditors. In his book, there are plenty of descriptions regarding books of account, financial statements, and the types of errors to be detected by auditors. But there is little or no attempt to explain how the audit should be conducted - particularly with regard to audit procedures.

By way of contrast, and thirty-one years later, on the other side of the Atlantic, Montgomery wrote a text at least three times larger than that of Pixley. It contained detailed descriptions relating to the commencement of audits, verification of transactions and financial statement items, as well as audit reports. In particular, it distinguished between balance sheet audits and transaction audits; it emphasised the importance to the auditor of a system of 'internal check'; and it advocated relatively sophisticated audit techniques such as the direct confirmation of their balances by customers. In other words, it, unlike Pixley, was very much a text for the qualified (or about to be qualified) accountant acting as auditor

to business enterprises. A reading of Pixley demanded far less knowledge of accountancy matters than did Montgomery.

(b) Pixley did not specifically state what audit objectives were in 1881, although he saw the auditor acting as a check on directors, thus preventing them from acting impulsively or recklessly to the detriment of shareholders (p. 7); and also as a source of advice regarding improvements in the bookkeeping system (p. 153). Lisle, in 1900, was more direct when stating, in order of importance, the following audit aims (pp. 348-9):

1. To detect any error, whether of omission or commission.
2. To see that the concern is properly and economically managed on business lines, so that the main object of the existence of all businesses, namely, the yielding of a return to those interested, may be achieved.
3. To ascertain that all regulations of a financial kind, whether contained in Acts of Parliament, deeds of co-partnership, agreements, resolutions, or other regulations which apply to the accounts under examination, have been properly complied with.
4. To certify the accuracy of the accounts.'

Montgomery's views on audit objectives in 1912 have already been quoted at the end of the previous section – they relate to the ascertainment of the financial condition and earnings of the entity, and to the detection of fraud and errors.

Thus, these three separate views on audit objectives represent considerable change – Pixley looking to error prevention and bookkeeping advice; Lisle advocating error detection and an almost open-ended list of other aims akin to a modern management audit; and Montgomery relegating fraud detection in favour of an assessment of the quality of financial statements. Obviously, the last view is the one closest to those of the present day, but it is interesting to note the existing unrest in the profession with regard to the diminution over the years in the importance of the fraud detection aim. Equally, it is interesting to note the view that the auditor should give advice and ensure the proper management of the entity concerned. Management or operational auditing does not therefore appear to be a new idea.

Some things do not change

Finally, it would be inappropriate in this review to ignore matters which appear to have been points of concern to early practitioners, and which remain largely unresolved problems to this day – some being more serious than others.

(a) The question of the independence of auditors is

still a matter of debate in the UK, although it is largely regulated in America. In particular, the issue of whether or not auditors should be allowed to be shareholders in client companies is presently being considered by the UK professional accountancy bodies. Note, however, Pixley's condemnation of the practice in 1881 – almost one hundred years ago (p. 152):

'It is true that the possession of an interest in the Company is an incentive to him to look carefully into its accounts, but, as just shown, his ability may not be equal to allowing him to carry out his intentions, and moreover it does not follow that he will use any knowledge gained during his investigation for the benefit of his co-partners.'

(b) Montgomery, particularly, had a considerable amount to say about the state of financial reporting in the early 1900s – for example, he condemned outright the use of 'secret reserve' accounting (pp. 141-7). Although recognising such accounting had its supporters, Montgomery had little time for it, believing that shareholders were entitled to truthful information free of what he described as 'flagrant undervaluations'. The wheel appears to have turned full circle recently in the UK as a result of the current cost accounting proposals in Exposure Draft 18. Due to a lack of definition of income and capital, it is possible to envisage secret reserve accounting returning to financial reports – although obviously not with the same degree of secrecy possible several decades ago. It is interesting to wonder what Montgomery would have to say on ED18.

Epilogue

What a reading of these three accounting 'classics' should provide is largely what has been elaborated on in the previous paragraphs – that is, a review of accounting and auditing as they existed many years ago reveals not that there has been a tremendous amount of change but that many of today's practices and problems were recognised and discussed by the early practitioner-writers. In fact, it can be argued that there are few things which are new in financial reporting. Many of the points raised by Pixley, Lisle and Montgomery are equally relevant to the literature of today.

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The Depreciation of Factories, Mines and Industrial Undertakings and their Valuation.
Ewing Matheson. E. & F. N. Spon, 2nd edition 1893.
 Reprint Edition, Arno Press, New York, 1976.
 x + 143 pp. \$US 12.00.

Depreciation and Wasting Assets and their Treatment in Assessing Annual Profit and Loss. *P. D. Leake.* Henry Good and Son, 1912. Reprint Edition, Arno Press, New York, 1976. x + 183 pp. + tables \$US 14.00.

The Natural Business Year and Thirteen Other Themes. *Elijah Watt Sells.* A. W. Shaw Company, 1924. Reprint Edition, Arno Press, New York, 1976. xxviii + 276 pp. \$US 18.00.

Folsom's Logical Book-keeping. The Logic of Accounts. *E. G. Folsom.* A. S. Barnes & Company 1873. Reprint Edition, Arno Press, New York, 1976. xvi + 443 pp. \$US 27.00.

Soulé's New Science and Practice of Accounts. *Geo. Soulé.* The Author, 7th edition, enlarged, 1903. Reprint Edition, Arno Press, New York, 1976. 749 pp. \$US 43.00.

These volumes are five in the series of facsimile reproductions of works in The Arno Press Collection on the History of Accounting, and the publishers, Arno Press, New York, are to be commended for making such works as these available to present-day readers.

Of the five books covered in this review, two, namely Matheson and Leake, are British and deal specifically with depreciation, while the other three are American. Each of the five has its interest for anybody delving in the literature of that period when the modern profession of accountancy was in its early, formative years.

At this distance of fifty to one hundred years after original publication, it is scarcely necessary to attempt a detailed critical examination — at least in a review — of the arguments or presentations of any of these writers or even to try to assess the impact of each work on its contemporary audience. It might well be easy for a reviewer to apply hindsight to demonstrate his superior knowledge or judgment, but his criticisms could not affect the views of any of the authors who are not now in a position to benefit from his helpful comments. Hence it seems more apposite to consider what each work has of interest to us as students of accounting history or as providing evidence of the environment in which it was produced.

In the closing decades of the nineteenth century and the early years of the twentieth, Matheson and Leake were important contributors to the discussion on depreciation — a topic which has attracted a good deal of the attention of accountants ever since — and, if one may judge from the fact that each of their books went through several editions over a considerable period, they probably had a significant influence on practising accountants, at least in Britain and the British Commonwealth, in their procedures relating to depreciation and its related topics.

Matheson's was the first book in the literature of accounting to deal at length with depreciation. The author was an engineer and the early part of the book was a revision and extension of a series of articles in the *Engineer* in 1883. It seems a pity that the first edition of 1884 has not been reproduced rather than this second one of 1893.

In the preface, Matheson pointed out that 'while Accountants may properly deal with facts and figures presented to them, and may fairly allot to Capital and Revenue actual expenditure or Estimated Depreciation, they must always be dependent for the accuracy of these *data* on those technically acquainted with the operations of manufacture' (p. v), presumably the engineers. In an introduction to this second edition of 1893, William Charles Jackson, 'Mem. Council Inst. Chartered Accountants,' wrote: 'Few of the persons in whose interest his services as an auditor are employed, are fully competent to appreciate that profits of manufacture are not gained until the loss by the wearing out of the machinery of production is provided for; while many of those who conduct the affairs of Companies are unwilling to acknowledge the necessity of such provision, where apparent profits are cut down and dividends thereby diminished' (p. vii).

Put briefly, Matheson's argument was that 'the question of depreciation cannot be separated from that of maintenance' (p. 1), wear and tear in producing earnings 'must sooner or later be paid for out of revenue or from new capital' (pp. 3-4), the 'most effectual method' of determining depreciation 'would be, if it were feasible, to Revalue everything at stated intervals, and to write off whatever loss such valuations might reveal without regard to any prescribed rate' (p. 14), the 'next best plan' being 'to establish average rates which can, without much trouble, be written off every year, and to check the result by complete or partial valuations at longer intervals' (p. 15). Thereafter Matheson explores the question of determining rate of depreciation, in general and in relation to various kinds of long-term assets, and devotes the latter part of the book to problems of valuation of various kinds of property. Among other things, he states that 'to depreciate plant is to provide for contingencies as well as for the rate of wearing out which may be immediately visible' (p. 24) and points out that the reducing balance was more usual than the straight-line method of calculating depreciation (pp. 25-6).

Matheson's book had reached its fourth edition (1910) by the time Leake was probably writing his. In his introduction, which is dated 13th November, 1911, Leake, who was a prominent accountant, could observe that 'it is startling to find the general

admission that the subject [of depreciation and wasting assets] is in an altogether neglected and chaotic state' (p. 2) and that 'the present precarious and uncertain way in which depreciation is charged to annual revenue often causes the declared annual results to oscillate violently between one year and another' (p. 4). He also observed that 'the vital importance of the whole subject has always been insisted upon by professional accountants, and its neglect continues in spite of, and not in consequence of their attitude' (p. 6).

For Leake, depreciation means 'fall in exchangeable value of wasting assets, computed on the basis of cost expired during the period of their use in seeking profits, increase, or other advantage. Depreciation is a part of the cost of seeking profits, equal in importance to other revenue expenditure' (p. 9). It is unaffected by market fluctuations in value of the assets used (p. 10). Wasting assets 'consist of all forms of exchangeable value which inevitably diminish while applied to the purpose of seeking profits, increase, or advantage otherwise than by purchase and sale' (p. 15), and include not only buildings, plant, machinery, fixtures, equipment and similar fixed assets, but also 'the mass or source of any natural raw material,' mine works, purchased terminable annuities and concessions, leasehold, copyrights, patent rights, goodwill and trade marks.

He expounded the view that 'all capital outlay on wasting assets consists merely of payments made in advance on revenue account' (p. 19) and for him the notion of depreciation was precisely conveyed by the term 'expired capital outlay'. It is not related to future renewals but solely to the past (p. 76) and is 'wholly unaffected by fluctuations in the market price of similar property during the period of its use' (p. 77). He is an advocate of the straight-line and an adversary of the reducing balance method, but his principal objection is to 'spasmodic allocations of revenue account balances to reserve accounts to meet requirements of really unknown extent,' and 'the rough-and-ready apportionment between capital and revenue accounts of large outlays on combined renewals and extensions' (p. 93). When he states, in connection with goodwill, that 'the portion of the expected future profits which has exchangeable value is only the surplus profits, that is, the amount by which the future profits is [*sic*] likely to exceed the sum needed to attract ability and capital to the enterprise' (p. 162) he is expressing in embryo the substance of his later contribution to accounting thought, the super profit theory of measuring goodwill.

It is interesting to compare these two works on depreciation, but it should be noted that between them Dicksee had published a book on the topic

(another volume in this series of reprints) and there had also been a large number of articles in professional journals on the subject. Although there are differences between their views, both were concerned to preserve the real value of capital and both agreed on the necessity to have depreciation recognised as a proper and regular charge against revenue in arriving at periodic net and profit or loss.

Elijah Watt Sells was the co-founder of the firm of Haskins and Sells, which is now one of the 'big eight' firms of world professional accountancy. The two founders were brought together in 1893 as outside expert advisers to a US Federal Government commission on procedures and methods of handling the affairs of government; they worked closely for more than a year and a half and soon afterwards went into partnership in New York. The writings included in this volume are of various dates between 1904 and 1921 and appended to each of the fourteen pieces is an editorial note written at the time of publication in 1924.

The book includes an interesting report, prepared by Sells in 1904, on the settling of railroad interline freight claims, part of which is devoted to describing the peregrinations of several such claims; one of them, for \$23, produced 109 pieces of paper and took two-and-a-half years to settle, and this was not completely atypical.

Although the fourteen essays do not constitute a major contribution to the literature of accounting, several of them throw some light upon the environment in which the profession had its early stages of development in the USA. In some respects at least, history does sometimes seem to be reiterative, and some of the views expressed by Sells (whatever one's own opinions may be) sound contemporaneously familiar. Consider such examples as these: 'We are facing today [1921] two factors of excessively high cost, labor and taxation' (p. 6); '... the present-day [1911] inertia of business is due more to the unwarranted agitation of the politicians against corporations than to any other one cause' (p. 136); 'whatever drains business of its resources dulls its initiative, saps its vitality and holds the nation back from reconstruction and sane, normal progress. The Government's just need of money does not essentially make right its method of getting it' (p. 165). His views on professional functions seem to be unequivocal. For example: 'Primarily, an accountant is not employed to give advice, but sometimes he is asked to, and then it becomes part of his business' (p. 29); 'The public accountant . . . takes the view point of an impartial outsider, does his work accordingly, and presents the results of his investigation in the form and detail which his judgment

may dictate, which may or may not be in accord with the proprietor's views' (p. 42).

But perhaps the most interesting features in Sells are the glimpses given of business and accounting life at the time. For example, he was able to say as late as 1921 that 'on a liberal estimate, only 10% of all businesses employ public accountants; 90% flounder along somehow, except where some man of unusual intelligence is able to read his own business' (p. 23). While, in a paper entitled 'Why Not Lessen the Evils of Present Taxation?' in 1921, he said: 'The present income tax, and its twin incumbrances, the surtax and the excess profits tax, are wrong because they cripple unnaturally individual and corporate enterprise and activity at the very hour when they are most needed' (p. 165); in another paper a few months earlier he had observed: 'One of the biggest factors in the development of the public understanding of figures is the income tax. Several millions of people have been forced for the first time to consider themselves in figures . . . They have worked out their own problems or called on public accountants for help' (p. 26).

E. G. Folsom, described on the title page as proprietor of The Albany Bryant & Stratton College, presents a logical exposition of double entry 'based on Value, as being of two primary classes, Commercial and Ideal; and reducing all their exchanges to nine equations and thirteen results.' In the course of doing this, however, he uses some distinctive terminology which becomes rather involved in its application, so that what he claims as a simplification becomes intricate if not actually confusing. Nevertheless he does arrive at a consistent, if complicated, formula for double entry recording. His logical system is indeed based on and derived from economic concepts of value and service; it is perhaps significant, as A.C. Littleton has suggested, for its insistence that the procedures of double entry do have a rational basis in economic activity. However, when it comes to formulating the 'law' for debit and credit, he offers only the old one that all value received is debited and all value given is credited; his reasons are: 'Value received is debited because it owes the value given to produce it. Hence all value received is debited,' and 'Value given is credited because it is owned for having produced the value received. Hence all value given is credited' (p. 31).

Much of Folsom's intricacy seems to arise from his classificatory schema and his nomenclature. For example, after having dichotomised value into 'commercial' and 'ideal', he subdivides the former into 'actual' and 'evidential' and the latter into 'labor or services' and 'ownership'. The need to fit specific phenomena into these categories results in

such a thing as bank drafts being instances of actual commercial value while bills receivable and bills payable are evidential commercial values. And when he states (p. 343) that 'when we apply *returns*, say, to the credit of merchandise, we do not mean that such credit *is* the returns, but that it shows the amount of returns which appear at the debit of some other account or accounts,' it is difficult to avoid wishing that his system of nomenclature could have been developed with greater singularity of meaning. Further, the apparent desire or requirement to adhere to philological meanings for debit (he owes) and credit (he trusts) makes for involved attempts at rationalisation.

Despite these idiosyncracies, Folsom deserves recognition for having attempted a logical exposition of double entry as an application of economic concepts; even if the result turned out to be somewhat cumbersome it cannot be said that the attempt was wholly unsuccessful.

Soulé's *New Science and Practice of Accounts* is, by contrast, a strange mixture. The work reprinted in this series is the seventh edition of 1903, comprising over 700 pages, whereas the first edition of 1881, according to Bentley and Leonard's Bibliography, ran to 279 pages. There would thus seem to be considerable substance for Soulé's claim (p. 8) that 'the work has grown, by the accretion of new and higher Accounting knowledge' and 'during the 22 years it has been before the public, it has won the favour and has received the highest commendations of Accountants and Business Men.'

There is no logical plan of exposition that this reviewer could discern, but in places there are some delightful examples of flowery and emotive writing, and at the foot of almost every page there is a wholesome proverb or moral maxim. The growth of the work appears to have been haphazard, the accretion of material uneven. There is no table of contents, but there is a detailed index, without which it would be very time-consuming to search for any particular topic in which one might be interested. In short, it is a miscellaneous and seemingly unordered collection of text, examples, questions, problems, argument and observation.

The following are examples of the occasional colourful language: 'And in this march of progress, the system of account-keeping has progressed from knots in strings, notches in reeds, and pebbles in chests, to the perfect equilibrium system of Double Entry Book-keeping which, to-day, in its manifold forms, holds trade and commerce in their orbits, and maintains in harmonious revolution the financial values of the business world' (p. 201). 'What Quadratics is to Algebra, what Differential Calculus is

to Mathematics, what the Supreme Court is to our System of Jurisprudence, Partnership Settlements is to the Science of Accounts' (p. 596).

It is rather like a lucky dip, and the reader can find the recording for company reorganisation or a letter declining an invitation to a dinner party, a set of books for a plantation business or the rules for the use of the apostrophe, steamboat book-keeping or the regulations of the New Orleans Clearing House ('All conversation and smoking are forbidden during Exchanges.')

Perhaps this 1903 edition does reflect the 'state of the art' in the USA at the turn of the century; at least, anybody interested in the history of accounting at that period should examine this work. Indeed, one gets an impression that if one were able to trace Soulé's work through its successive editions one might well get a fairly representative moving picture, so to speak, of changes in business and accounting practice during the period.

Although there have long been some people interested in the history of accounting, their number has been small and their efforts largely isolated; consequently, many of the seminal and influential books of earlier years have been out of print and hard to refer to. The republishing of books such as those covered in this review is a welcome indication that there has recently been a widening of interest in accounting history among academics and practitioners. After all, many people in other disciplines do really believe that knowledge is cumulative, and a profession that has no regard for the work of its earlier practitioners and professors can hardly be said to deserve itself the attention or respect of following generations. Perusal of books such as these — however widely different in scope and method they may be — may serve to remind us that some of our present problems have long and old roots and that ours is not the first generation of accountants to be faced with difficult situations, whether of theory, practice or ethics.

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The Late Nineteenth Century Debate over Depreciation, Capital and Income. *Richard P. Brief* (editor). Arno Press, New York, 1976. US \$15.
Profits, Dividends and the Law. *Prosper Reiter Jr.* Ronald Press, New York, 1926. Reprint Edition, Arno Press, New York, 1976. ix + 260 pp. US \$16.
Corporate Dividends. *Donald Kehl.* Ronald Press, New York, 1941. Reprint Edition, Arno Press, New York, 1976. xi + 367 pp. US \$22.
 These three volumes are mainly concerned with the

same topic: the law and practice relating to the determination of profit available for company dividends, a topic which has been much discussed and debated since the latter part of the nineteenth century.

The first mentioned is an anthology of 16 articles and papers which have appeared in *The Accountant*, and three well known reported legal decisions. Except for the first article by the editor, 'Depreciation Theory in Historical Perspective', which was published in *The Accountant* in 1970, and which serves as a very good introduction to the volume, the articles and cases were first published during the period 1876–1894. The titles of the articles indicate clearly the nature of the discussion which permeates them all: '(Summary of) Depreciation in Relation to the Audit of Accounts' by J. Mather (1876); 'Depreciation and Sinking Funds' by E. Guthrie (1883); 'Payment of Dividend out of Capital' by J. W. Best (1885); 'What is Income?' by J. M. Wade (1886); 'Wear and Tear and Depreciation' by A. Murray (1887); 'What is Profit of a Company?' by E. Cooper (1888); 'The Writing Off of Depreciation on the Wasting Assets of a Joint Stock Company' by J. D. S. Bogle (1889); 'Obligation of Company to Provide for Depreciation of Wasting Assets before Declaring Dividends', Glasgow Institute of Accountants Debating Society (1889); 'The Calculation of Depreciation' by O. G. Ladelle (1890); 'On the Profit of Companies available for Distribution' by T. A. Welton (1890); 'Notes on Mr. T. A. Welton's Paper' by E. Cooper (1891); 'The Principles upon which the Assets of a Joint Stock Company should be Valued for Balance Sheets' by A. W. Payne (1892); 'The Capital of a Company with Special Reference to its Reduction' by P. O. Lawrence (1893); 'The Depreciation of Machinery and Plant' by T. A. Hartley (1894); 'Chartered Accountants and the Profit Question' by E. Cooper (1894). The three reported cases reproduced are: *Dent v The London Tramway Company Ltd.* (1879); *Lee v Neuchatel Asphalte Co.* (1889); and *Verner v The General and Commercial Investment Trust Ltd.* (1894).

The articles clearly indicate that many of the issues relating to accounting for assets were extensively discussed and debated during the latter period of last century, and that the accountant of those days was obviously upset by the failure of the law to uphold the principles which he considered to be fundamental to his discipline. In contrast with the professional accountant today, he had no other source of authority upon which to rely when carrying out his duties as accountant or auditor. A study of these articles shows how much the status and authority of the profession have developed during the past few decades, even if at times there have been serious setbacks.

The selection of the three cases is not surprising but the reviewer suggests that as with most writers (including the authors of the other two volumes) one important key case has been overlooked, namely *Lambert v Neuchatel Asphalte Co.* (1882) in which, as in a number of earlier cases, it was held that the determination of profits is a matter of internal management with which the Courts will not normally interfere. All subsequent cases were brought under an exception to this rule, namely that the Courts may interfere if the company is acting *ultra vires*. Thus a better understanding of the legal context of these cases offers some justification for the Courts' persistent upholding of majority decisions of shareholders, oft-times with very questionable logic.

An early reviewer of the second volume, *Profits, Dividends and the Law*, by Prosper Reiter Jr., points out that the auditor was a lawyer and accountant and that in writing the book he drew on both skills. After a preliminary discussion of fundamental accounting concepts, the book, though obviously written mainly for North American consumption, continues with quite a lengthy discussion of English law. The reason given for this is that it appears that the English case of *Burnes v Pennell* (1849) and the Limited Liability Act 1855 furnish the foundations of the structure of the law in the USA governing the liability of corporation directors and stockholders for the declaration and receipt of dividends not having profits as their source. (Yet the relevant requirement of the Act of 1855 was repealed in the UK in 1856 and never appeared again.) Furthermore, a line of English decisions, starting with *Lee v Neuchatel Asphalte Co.*, contain language which, if taken literally and without a detailed study of the particular situation involved, results in a series of legal rules violating many well established and easily understood accounting principles. The author also argues that much of the language of these particular English cases has been freely cited in text books on corporation law as authority for some startling doctrines which were never decided at all.

Part II of this publication is concerned with American law and practice. It begins with a discussion of the theory and extent of the liability of stockholders and directors where there has been an application of corporate funds detrimental to creditors. A number of chapters follow which explain the elements involved in measuring the value expiration of balance sheet asset items and where possible the attitude of the Courts. It is shown that there cannot be a profit available for dividends until out of gross revenue consideration has been given to such factors as depreciation, depletion, the value expiration of immaterial assets and realised changes in the value of

investments. The availability of unrealised appreciation of assets and various kinds of paid in surplus for distribution is also discussed.

It is to be hoped that the author's objective of producing a book which would stimulate further thought in the field of legal accountancy and enable lawyers to appreciate the accounting principles involved has been fulfilled. The book is certainly of value to accountants who wish to study the complicated and conflicting legal data of both the UK and the USA.

Donald Kehl, the author of the third volume *Corporate Dividends*, is described as a 'member of the New York Bar'. This is primarily a legal treatise but its treatment differs in two respects from a normal legal book. First, a careful analysis of the statutory evolution of the then current dividend statutes in each of the 48 states is given primary emphasis, as distinguished from the normal practice of giving principal weight to dividend cases. Second, the statutes in question are interpreted not only on the basis of judicial cases, but also in the light of accounting practices and opinions of accounting writers, and the author makes a serious effort to harmonise accounting and legal principles.

The first chapter provides a brief historical background and endeavours to show the influence of the early statutory provisions on the statutory enactments current in 1941. There then follows a chapter considering the current dividend statutes in each state and the three basic statutory rules for ascertaining the fund from which dividends may be declared: the insolvency test employed by states having the Massachusetts type statute (based on a requirement of the UK Limited Liability Act 1855 mentioned above); the balance sheet surplus test as typified by the New York statute; and the later net profits test used in Delaware. The next two chapters are devoted to the application of accounting principles under these statutes.

Separate chapters are devoted to the liabilities of directors and stockholders in the event of an illegal dividend being declared. Special consideration is given to the taxation of dividends, the conflicting rights of common and preferred stockholders and the effect of a merger or consolidation upon future dividends from the funds of the constituent corporations previously available for dividend. Attention is also given to administrative determinations of the Securities and Exchange Commission regarding dividends. This is undoubtedly an exceptionally thorough study of the subject at the date at which it was written.

Each of the volumes includes a list of the books under the heading of 'The History of Accounting'

currently available from the Arno Press; and those responsible for this collection are to be congratulated on producing or reproducing such an excellent set. Like the three volumes reviewed they will be much sought after by accounting historians and university

and professional libraries. They fulfil a long felt need in a field where there have obviously been many books which have hitherto not been available to the majority of interested readers.

University of Auckland

Trevor Johnston

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Book Reviews

Self-Assessment for Income Tax. *N. A. Barr, S. R. James and A. R. Prest.* Heinemann Educational Books for ICAEW and IFS, 1977. xii + 218 pp. £7.50.

In 1973 the Inland Revenue employed 70,000 people to deal with the tax affairs of a population of 56 million. In the same year the Internal Revenue Service in the USA also employed 70,000 people but it handled the tax affairs of a population of 210 million. Therefore the productivity of the UK tax administration service is only one quarter that of its equivalent in the USA. We should do something about this, and the obvious action required is the adoption of the North American system of self-assessment by the taxpayer.

The foregoing is a gross simplification of the theme of this thoughtful and engagingly written book, which is by a team of three economists.

The authors define a self-assessment system of income tax as one in which the following three tasks are undertaken by the taxpayer rather than by a publicly-paid tax administrator:

- (i) the calculation of the taxpayer's total income for the year,
- (ii) the calculation of the taxpayer's total tax-free income for the year, i.e. the sum of his personal allowances,
- (iii) the calculation of the taxpayer's taxable income for the year.

Additionally, many self-assessment systems include a fourth stage:

- (iv) the calculation of total tax payable for the year.

At the moment in the UK roughly one half of income tax payers are only required to complete a tax return once every five years as their income sources and allowances are constant and straightforward and the PAYE system produces almost exactly the right tax deduction each year. It follows that the effect of a change to self-assessment would be that *all* taxpayers would have to complete a return every year. It would also mean that the taxpayer would not merely enter details of income, his wife's name, and so on, in the boxes on his tax return form, but he would have to enter the *amount* of each income source and the *amount* of each personal allowance claimed in a grid. And he would then have to undertake additions and subtractions to arrive at taxable income and also (if stage (iv) were to be included in

the reformed system), apply the basic rate and higher rates thereto to arrive at the tax due. The taxpayer would then send in his return with a remittance for any tax due.

This sort of system works well in the USA, Canada, Sweden and Japan but it does require a relatively simple tax code, and the present UK tax régime is far from simple. For example the UK taxpayer has to answer 45 questions to establish his entitlement to personal allowances (questions dealing with marital status, children, dependant relatives etc.), whilst the US taxpayer answers only eleven questions. The authors therefore sensibly tie their proposals for self-assessment to a warning that the simplification of personal allowances must accompany the change.

When the Inland Revenue received the new forms of tax return they would make a computerised check on the arithmetic of all taxpayers and verify the data therein by a system of sampling, with penalties for the untruthful. Barr, James and Prest describe the IRS procedures in some detail, and if the Inland Revenue were to follow the American practice they would audit from two to five per cent of taxpayers each year. This sampling process would be randomised within income categories so that those with very low incomes would have under a one per cent probability of investigation whilst those with large incomes might have a 60 per cent probability of audit in any one year. The IRS has categories of audit ranging from an elementary 'correspondence audit', designed to clear up simple queries or apparent errors in allowance claims, to a 'field audit' conducted by a team of three to five qualified accountants, the thoroughness of whose methods would cause anxiety to the most honest of taxpayers. The IRS also has a system whereby a citizen who sneaks on a dishonest taxpayer can claim a reward of up to ten per cent of the tax plus penalty collected from the defaulter.

Self-assessment would not mean the end of the PAYE system though the authors suggest that Schedule E deductions should be calculated non-cumulatively so that the PAYE tax deducted in, say, week 20 would depend only on the gross pay earned in week 20 and not, as now, on the cumulative gross pay earned in weeks one to 20 inclusive. Chapter 3 contains an interesting proof of the proposition that a non-cumulative deduction system will lead to over-

withholding if income fluctuates during the year, *whether the fluctuation is upwards or downwards*. This proposition, which is not on the face of it self-evident, is a powerful argument for a non-cumulative withholding system. This is so because the tax authorities want employees to be overwithheld as this means that taxpayers will be eager to send in their tax returns to claim the refunds they are entitled to. Oddly enough taxpayers themselves seem to like being overwithheld – regarding it as a painless way of saving even though such savings earn no interest and shrivel in real terms due to inflation.

The authors give careful consideration to all the usual arguments against self-assessment, including the obvious one that the system merely lowers public administrative cost by imposing a large new private cost burden. Their answer to this charge is thorough and convincing, being based largely on practical evidence from existing self-assessment systems rather than on theoretical considerations.

The book is especially valuable in its description of the US and Canadian tax systems. Several sources are already available which compare and contrast tax systems, but Barr, James and Prest describe not merely the legalities of the systems covered but also practical details. For example when covering the taxpayer's compliance costs their discussion ranges from the large and respectable tax preparing firm of H. & R. Block (which operates on a franchise basis and has 7,000 offices throughout the USA and a turnover of \$114 million from preparing 8.6 million returns) to fly-by-night tax consultants who lurk in massage parlours!

The book has two minor weaknesses. Firstly it is positively infested with footnotes: chapter 3 alone has 84 of them. This intemperate zeal for footnotes is annoying because constant reference to the foot of the page tires the reader and disturbs the smooth comprehension of the text. Secondly the authors sometimes lose their sense of proportion and devote space to obscure topics of trifling significance. For example the book discusses the PAYE variations applied to handle the stipend of Roman Catholic priests; the book allowance available to university teachers under Schedule E; and the possibilities of introducing self-assessment for income assessable under Schedule B. None of these specialised topics merited coverage.

Generally, the authors argue for self-assessment in a balanced, practical way and their realism is illustrated by their discussion of how their proposal should be developed. The sensible next step would be for more detailed research into the implications of self-assessment, and this could only be done within the Inland Revenue. Senior officials in that service are

hardly likely to conduct such research with total objectivity when self-assessment would reduce their empire and their promotion prospects, and could even lead to their redundancy.

University of Aberdeen

M. F. Morley

The Evolution of Giant Firms in Britain.

S. J. Prais. Cambridge University Press, 1976. xviii + 321 pp. £8.50.

Professor Prais' theme is the growth in aggregate concentration in the British economy (measured as the share in manufacturing output of the top 100 firms) from 1909 to 1970, although his more speculative observations go back to 1850 and forward to 2000. International comparisons with the USA and, more sketchily, with other West European countries, are also provided.

The broad picture which emerges is that industrial concentration has proceeded inexorably throughout the twentieth century, interrupted in part by the Second World War but more than compensating for this by accelerating during the final 20 years of the period studied. The possible causes of the latter phenomenon are then examined in some detail. It is found that the recent rapid growth of the top 100 manufacturing companies has been associated with an extension of multi-plant operation, rather than an increase in average plant size, so that productive economies of scale do not appear to have been the primary motivation. Changes in advertising and transport costs are then examined and found to be possible contributory factors, but the main explanation advanced for the recent acceleration in the growth of the top 100 is the financial advantages enjoyed by large firms, which are examined in the longest chapter of the book. The author does not approve of this state of affairs and in a final chapter, 'Reflections', advances some contentious proposals (such as a corporation tax which is progressive with respect to firm size) for discouraging the growth of very large firms.

The theme of the book is of great interest to practitioners of accounting and finance as well as to economists and the author has gone to some pains to reach a wide audience by purging the text of technicalities which are banished to copious footnotes (which occupy no less than 77 pages at the end of the book) and six appendices. The result is a clear and compact survey of an enormous range of statistical, institutional, and theoretical material, presented with meticulous respect for the limitations of the evidence. It is an excellent example of empirical economics. This is not to say that all of Professor Prais' conclusions are necessarily correct, or that he is without

error. He can be intolerant of the work of others and dogmatic in his own defence. His justification for studying aggregate concentration, rather than concentration in specific markets, deserves amplification. Equally, his measure of concentration (the share of the top 100) could usefully be matched against alternative measures, such as the Pareto coefficient or measures of mobility, which at present receive scant treatment (dismissal in a footnote). The unwary reader may, for example, gain the impression that the top 100 companies are inexorably advancing towards domination of the manufacturing sector, whereas in fact the top 100 is itself a mobile and changing population. The latter fact must surely temper some of the author's fears of oligarchic control of manufacturing industry.

The exposition of the growth of concentration is dominated by the author's strong adherence to the view that the size distribution of firms is a log-normal one arising from proportionate growth being substantially independent of initial firm size. This is a useful model for expository purposes, but the non-technical reader may be misled into thinking that it fits the facts precisely and that there are no competing models. Important issues such as the statistical problems of fitting log-normal distributions and the failure of the model to deal with births of new companies and deaths of old ones are dealt with in appendices, and even there certain issues are brushed aside. For example, no explicit reference is made to the important sequence of papers published by Herbert Simon and Yuji Ijiri, which provides an alternative model, incorporating births, deaths and mergers, and leading to the competing Pareto distribution.

Chapter 5, which deals with financial factors, will be of particular interest to readers of *Accounting and Business Research*. The empirical studies of cost of capital with respect to firm size are carefully surveyed and it is found, not surprisingly, that the cost of capital probably decreases with firm size. This is attributed partly to the growing importance of institutional shareholders, who find large firms a particularly convenient medium for investing the large sums at their disposal. Furthermore, the existence of large institutional holdings may have facilitated the increased number of takeovers: another source of increased concentration. This is an interesting hypothesis, and the chapter draws together diverse sources very skilfully, although it is not immune from omissions and intolerance. In particular, the names of Modigliani and Miller are not mentioned, but a footnote says that 'There has been a tedious debate in the American literature on whether gearing lowers the total cost of a firm's capital . . . it is clear from the

discussion in the text that the proposition has no universal validity and no relevance in explaining what has been happening in the industrial capital market of the post-war period' (p. 265). The reader who is not acquainted with the finance literature will probably be misled by this dogmatic statement, and the reader who *is* acquainted with the literature would welcome evidence to support such a striking conclusion.

However, it is in the nature of work of this type, surveying a wide field and dealing often with imperfect evidence, that subjective matters of selection and emphasis are important and that the reader will not always accept the author's conclusions. What matters in such circumstances is a clear and balanced presentation of the evidence, and, for the most part, Professor Prais provides this admirably, especially for the reader who takes the trouble to read the footnotes (which, significantly, are *not* in small print) and applies the author's own high critical standards. Moreover, the statistical analysis, primarily based on the Census of Production, is fastidiously clear and precise, as those who know the author's earlier work would expect. In summary, this book provides valuable perspective on recent developments in both accounting and finance, as well as raising crucial questions about the evolution and possible survival of the market economy. Apart from its other virtues, it is a veritable mine of topics requiring further research, not least in the area of finance.

University of Bristol

G. Whittington

Accounting Standards 1977. The Institute of Chartered Accountants in England and Wales, 1977. iv + 265 pp. £3.95.

This paperback recently published by the English Institute will be a handy reference book for finance directors, accountants, government officials, merchant bankers, and security analysts who are concerned with the financial reporting practices of UK and Irish companies. It contains the exposure drafts issued by the Accounting Standards Committee since its inception which have not been converted into Statements of Standards Accounting Practice, as well as the eleven SSAPs issued by the Councils of the six cooperating accountancy bodies prior to 1 January 1977. The EDs and the SSAPs have not been reset for this publication, but are instead photocopies of the original ED releases and of Section M in the *Members' Handbook*. An index is supplied for the SSAPs but not for the EDs.

The book begins with a brief description of the standard-setting process now being employed by the

ASC. This disclosure is itself a revealing index of the depth of change that has occurred within the English Institute during the last decade. In the 1940s and 1950s, and even in the 1960s, it would have been unthinkable for the then secretive Institute to issue, let alone publish in a volume of general circulation, an elaborated statement of its internal decision-making process together with a status report, albeit brief, of the several projects in process.

Two curious omissions should be mentioned: the Recommendations on Accounting Principles and the Statements of the International Accounting Standards Committee. What is the current standing of the Recommendations, 29 of which were issued between 1942 and 1969? They are ignored altogether in this volume, and while its title is 'Accounting Standards' and not 'Accounting Standards and Principles', one would have expected to see some reference to the Recommendations. As far as the reviewer knows, the Recommendations have never been withdrawn; they have, as it were, been sent into exile since the announcement of the accounting standards programme in 1969/70. To be sure, the old Recommendations did not command compliance on the part of Institute members in the manner prescribed for the SSAPs, but they were, one supposes, widely respected and, in most instances, adopted in published annual accounts.

The reviewer is also surprised not to find any reference to the work of the IASC. (The IASC is mentioned only once, as being a member of the ASC's Consultative Group.) To say, as this volume does, that the SSAPs are 'formally supported by the Stock Exchange' (page 4) and not to add that a series of Standards issued by another accountancy body is also supported by the Stock Exchange, hardly gives a full and fair view of the current status of accounting standards in Britain. The possible divergence of UK/Irish Standards from IASC Standards has already been mooted, and one would have expected this volume to include the IASC Statements and EDs together with a brief description of the work of the IASC. Does this omission imply a falling out with the IASC, or is it entirely innocent?

Neither of these criticisms gainsays the usefulness of this compact volume, and the English Institute is to be complimented for making its accounting standards more generally available to interested parties.

Tulane and Harvard Universities Stephen A. Zeff

This book represents excellent value for money. It consists of 24 papers, only four of which have been previously published. The papers are organised into four sections, as follows:

- (i) Corporate strategy and planning: the concept and the need – three papers.
- (ii) Monitoring and forecasting the business environment – four papers.
- (iii) Formulating key strategies and plans – nine papers.
- (iv) Implementing corporate strategy – seven papers plus a substantial final paper relating to the whole of the book.

The two editors are between them responsible for nine of the papers, but only one other author (Brian C. Twiss) contributes more than one paper. A nice balance is thus obtained between consistency and variety, the variety being greatest where it is most needed – in the five case study papers. Of the 13 contributors, seven are currently employed in industry, five are currently academics and one is an Assistant Education Officer! This gives some idea of the flavour of the book, oriented as it is toward the practising manager rather than the student, yet nonetheless serving a limited role as background reading for second-year undergraduate and first-year MBA courses in management planning and control.

It would be unreasonable to expect all the papers to be of a uniformly high quality. Inevitably, each reader will consider some of the papers to be more satisfactory than others. For this reviewer, the highlights were provided by Bernard Taylor's six papers; solid, well thought-out efforts written in clear, simple prose and covering a very wide range of topics. At the other extreme, a few of the contributors have produced papers which are frankly 'potboilers'. It would be unkind to name them individually – suffice it to say that this book is at its weakest when dealing with statistical forecasting, financial planning and the design of management information systems. Production planning and technological forecasting, on the other hand, receive outstandingly good treatment.

The remainder of the papers are quite acceptable though unexciting, with studies of sociopolitical aspects, industrial relations, planning for growth through merger and international plant location planning, which seldom diverge from predictable paths. What seems to be missing is any sense of scepticism about the ability to plan at all in an extremely turbulent environment. It is significant in this context that most of the papers refer to the problems facing planners in the late 60s and early 70s rather than to the current problems of planning in recession and inflation. The balance of this book

would have been much improved by the introduction of a thoroughly iconoclastic 'anti-planning' paper like the one by Wildavsky in *Policy Sciences*, vol. 4, 1973, pp. 127-153. As it is, the book shows signs of excessive zeal in its advocacy of 'rational planning' as against 'irrational muddling through'. This, no doubt, is the way to 'sell' long range planning – but that surely cannot have been the intention when this book was compiled?

A crucial consideration deriving from this relates to the potential audience for this book. Here, a word of warning is in order. This is in no sense a scholarly work. Eight of the papers appear here without any bibliography at all, and three others have bibliographies confined to a single item. Though most of the authors speak from considerable practical experience, few of them give the impression of having read widely around their subjects, and there is a general tendency to rely upon pragmatism rather than to search for causation. This is all very well if the object is to seize the attention of 'busy managers' suspicious of 'theory', but it will scarcely do if the book is to be used for students. They need papers which stand as reasonably authoritative surveys of the scattered literature on this difficult subject – and Taylor and Sparkes have not succeeded at all in catering for this need. To be fair, it is questionable whether they intended to do so, but the intending purchaser should be put on his guard. If what is wanted is a brief and inexpensive skimming of a large number of topics in corporate planning, this book has much to commend it. However, it will not pass muster as a textbook; those wanting a comprehensive treatment of the problems and potentials of corporate strategy and planning in 1977 will have to look elsewhere. This book does not represent a significant advance upon the existing literature, though it may be accepted as a contribution to it.

University of Lancaster

Kenneth P. Gee

Collected Articles on Inflation Accounting. P. Rosenfield. ICRA Occasional Paper, no. 14, University of Lancaster, 1977. £1.50.

This is the fourteenth of the occasional papers that have been produced by ICRA. Several of these papers have been concerned with inflation accounting, and this particular paper is made up of eight articles that were written by Paul Rosenfield in the 1969-75 period. All of the articles appeared in the *Journal of Accountancy* and the 59 pages provided are photo-reproductions of the original articles.

In the last eight years there has, of course, been a tremendous number of articles published on the

subject of inflation accounting. It might therefore well be asked why it is important that eight articles should be picked out and published in a separate booklet. The foreword stresses the fact that Mr. Rosenfield has had extensive international experience with the AICPA and the IASC. I would suggest, however, that the major justification for separate publication is the fact that Mr. Rosenfield is one of the few writers who is a whole-hearted advocate of General Price-Level Accounting. This is important as in the last two or three years the case for GPLA has been almost completely neglected as we have debated the advantages and disadvantages of current cost accounting.

The first of the articles provided in this booklet is the 1969 publication concerning the GPLA field test that the AICPA organised in 18 American companies. For several years this article provided the only available evidence regarding the overall effects of GPLA on company earnings. In these early articles it soon becomes evident that Mr. Rosenfield is a strong advocate of GPLA, and this advocacy is maintained in two articles that are concerned with the very controversial subject of foreign operations. Mr. Rosenfield argues very strongly for a translate/restate procedure, although this approach has been strongly criticised by many writers on this subject.

The remaining articles are primarily concerned with the GPLA and CCA controversy. An excellent 1972 article examines some of the confused thinking regarding these two methods of accounting and stresses that these two rather different approaches 'are complementary responses to independent questions . . . and either or both may be adopted in a single set of financial statements'. By 1975, however, Mr. Rosenfield was convinced that CCA was 'a dead end' despite recommendations in several countries that this method of accounting should replace historical cost systems.

From the academic point of view, one of the most important articles for student attention will be the August 1975 study of the relevance and interpretability of GPLA statements. The UK experience of the mid-1970s would suggest that many businessmen and academics have grave doubts about the relevance of GPLA information, and it would seem to be desirable that Mr. Rosenfield's article should be read by students to provide a proper balance on this subject.

In the years that lie ahead it seems virtually certain that CCA systems will be adopted in several countries including the UK. In these circumstances there will inevitably be arguments amongst academics as to whether the subject of GPLA should be studied

in any detail. I feel that it would be dangerous to ignore this subject, and if this is accepted this booklet should be of great value for staff and student discussion purposes.

University of Exeter

P. R. A. Kirkman

Accounting Information Disclosure and Collective Bargaining. *B. Foley and K. Maunders*, Macmillan, 1977. x + 210 pp. £10.00.

Accountants interested in the disclosure of information to employees will have good cause to be grateful to the authors of this wide-ranging and well-researched book. Despite the international trend towards greater disclosure of company information, there are many accountants and managers who have doubts about the potential benefits said to accrue from such a policy. There have been many reasons propounded recently indicating perceived advantages of disclosure, namely the increased motivation resulting from attitudinal changes caused by wider dissemination of company information; the benefits of industrial democracy resulting from greater overall understanding of an organisation's affairs; and the rationalisation of collective bargaining based on shared information. Those who are sceptical about such advantages are liable to argue that accounting information is largely incomprehensible to lay negotiators, that there are dangers of confidential information being leaked to competitors and, above all, that the advantages of increased disclosure mainly flow in one direction and merely serve to increase the ability of trade unions to press for higher (and often inflationary) pay increases.

The authors discuss these opposing viewpoints and then move on to examine the empirical evidence available about the most crucial objection to increased disclosure – the effects of a shift in bargaining power. Two related questions have to be considered. First, can trade unions influence the rate of wage inflation and secondly, if the answer to the first question were to be in the affirmative, would an increase in the amount of company information supplied to trade unions enable them to exert even greater pressure? The empirical studies examined by the authors reveal the controversies surrounding these basic questions. At first the Phillips curve seemed to indicate that money wages were mainly determined not by trade union activity but by more fundamental economic factors. The onset of 'stagflation' in the UK and the USA, however, cast doubts upon the theories of the Phillips' school, and more sophisticated models incorporating variables such as price/wage expectations and trade union power have now tended to

support the theory that trade unions can exert upward pressure on pay settlements. The second hypothesis – that increased disclosure would enable even greater pressure to be exerted – has not been tested directly. Indeed, the lack of published data about wage settlements at company level would seem to make it impossible to test at present.

To obtain some assessment of the validity of this second hypothesis, the authors examined theoretical models of the collective bargaining situation and the role of information in pay negotiations. Their overall conclusion that disclosure does not always weaken the position of the discloser is influenced crucially by the Walton and McKersie concept of the division of the negotiating process into distributive, integrative and intra-organisational bargaining and attitudinal structuring. The potential conflict in distributive bargaining can, the authors argue, be alleviated in the long-term by the increased mutual trust resulting from the greater participation of all sections of the labour force in the running of the organisation (integrative bargaining) and by the more positive feelings towards the company engendered by the attempts to promote favourable attitudes among its employees (attitudinal structuring). This theme is developed further by the authors who imply that an atmosphere of mutual trust and cooperation could be fostered by a more liberal disclosure policy which would encourage the provision of information relevant to joint problem-solving activities. For problem-solving they assert that information concerning the company's future not its past would be vital, and consequently the typical historically based financial statement with its flexible profit figure would simply not be sufficiently relevant for joint co-operation except as a predictive aid.

The accountant's role in presenting information relevant for joint decision-making would, therefore, involve a switch from recording past events to quantifying predictions of the future. For example, in a distributive bargaining situation the authors suggest that a measure of *ex ante* economic income (termed distributable operating flow) less the minimum required return to providers of capital would be nominatively superior to alternative income measures. (As a practical alternative, however, they propose that predicted profits before tax but after grossed up dividends could be relevant to labour negotiators.) Predictions, however, need not only come from management and the authors make the pertinent suggestion that trade union negotiators' knowledge of other organisations in the same or related industries indicates that it is by no means certain that if these negotiators were given the same information as management their forecasts would be

any less accurate. The implications for integrative bargaining are obvious.

This multi-disciplinary book proposes a new function for accountants in the dynamic field of collective bargaining and as such is essential reading for those interested or involved in all forms of joint consultation and pay negotiations. This does not, however, mean that the authors supply all the answers to the problems of disclosure – this is too new a field for that to happen. Instead they have supplied a much needed service to industrial, professional and academic accountants by outlining national and international standpoints on disclosure, by discussing the empirical evidence on the controversial aspects of disclosure and by assessing the potential role of accountants in this field. For academic accountants this will be a useful book for teaching purposes (the references and notes at the end of each chapter are outstanding features of the book). It will be vital reading for those interested in research in the area of disclosure to employees as not only does it illustrate potential areas of fruitful research but it provides much of the background information necessary before such research can commence.

University of Edinburgh

D. P. Tweedie

Business Finance. *Graham Pierson and Ron Bird.* McGraw-Hill Australia, 1976 (2nd edition). 446 pp. A\$10.95.

Unfortunately, I have not seen the first edition of this book and so I cannot give an evaluation of the degree of improvement in this second edition. However, the authors indicate that the same general framework has been adopted with three exceptions: the cost of capital discussion has been deferred until much later in the book, the chapter on the Australian capital market has been extended to include the theory of interest rate determination and control of the capital market and, thirdly, the capital asset pricing model has been introduced in a series of appendices to chapters. Apparently the treatment of the CAPM in appendices was favoured so that instructors could exclude it from courses if they wished. My observations on these changes are to welcome both the interest rate determination sector (so many finance texts do not deal adequately with this topic) and the new pieces on the CAPM. However, I cannot understand how any instructor could feel justified in completely ignoring the CAPM and its implications – even in an introductory finance course. Surely this is so central to our thinking about finance now that students must be aware of it, even if it is rejected on practical grounds as a means of project selection or cost of capital determination.

This book follows a typical structure for an introductory business finance text with no obvious topic omissions. All discussions are examined and discussed carefully. The text is very clearly written; in fact the conciseness and clarity of style is, at least to the UK reader, a considerable improvement over the leading US texts. However, the US texts are so far superior in the provision of end of chapter examples and case studies that it is doubted if this text will replace them as a main course text in the UK. Nevertheless, I shall certainly encourage my students taking their first course in financial management to refer to this text if they have difficulty with explanations in American texts. However, any instructor tempted to do likewise should exercise care. When using foreign texts one is usually quite watchful in 'the main institutional chapters' of possible differences in practice between countries, but one also needs to be watchful for institutional differences in other chapters. A good example is chapter 13 on 'Lease Financing and the Evaluation of Leases'. Students (and possibly instructors too) who are not too familiar with leasing should not rely on the arguments in the text for and against leasing. While some arguments apply, their statements about taxation are completely inadequate in the UK setting where a significant tax advantage may well accrue to lessees; similarly non-recourse leverage leasing arrangements are rare in the UK – although non-recourse arrangements with manufacturers in 'Sales Aid Leases' are more common. However, these are really minor details regarding use of the book in the UK and can hardly be used as a criticism of the authors.

An interesting aspect of the text is a lengthy discussion at an early stage of the appropriate financial goals of the company. In fact it is a longer and more thorough discussion of this topic than available in other first level texts of this type. It is entirely proper of the authors to bring this to students' notice right at the outset. After considering all the alternatives, the authors conclude that maximisation of shareholders' welfare must be the dominant criterion. It would have been extremely surprising if they had done otherwise in an introductory business finance text when just about all 'accepted theory' in this area is based on this assumption (I do the same thing in my own courses and I bet most instructors do likewise). However, how many of us feel uneasy about this? Of course, we can (conveniently) rationalise the criterion choice and produce normative decision rules, but I sometimes wonder whether we shall ever adequately explain financial management *practices* until we move away from this narrow perspective. The degree to which we need to move away from this central assumption no doubt varies

from country to country, but in my experience in the UK intelligent students are becoming more and more dissatisfied with the sometimes very elaborate models which have been built on such a narrow behavioural base. It is time for a completely new finance text which takes a much wider perspective, but there seems to be no hope of one for some years while most academics confine their activities to this single dimension approach in their research. However, this is a comment on our activities in financial management in general. As a 'traditional type' text Pierson and Bird is solid enough and should sell well enough in Australia. I suspect sales elsewhere in the world will be limited to that consistent with appearance on additional reading lists.

University of Bath

C. R. Tomkins

Thomson McLintock & Co. – the First Hundred Years. *Rex Winsbury.* Thomson McLintock & Co., 1977. xi + 164 pp.

Accounting in Transition: Oral Histories of Recent U.S. Experience. *Thomas J. Burns (editor).* College of Administrative Science, The Ohio State University, Columbus, Ohio, 1974. xiv + 305 pp. The two books under review cover different aspects of the history of the accountancy profession in the UK and USA.

Thomson McLintock founded the firm that bears his name in 1877 in Glasgow, at the age of 26. He never received any formal training as an accountant or passed any accounting examinations but was admitted to membership of the Institute of Chartered Accountants in England and Wales in 1880 and of the Institute of Accountants and Actuaries in Glasgow in 1891. He made his primary reputation as an accountant as a result of his handling of catastrophes relating to the City of Glasgow Bank crash in 1878. A London office was established in 1914; in 1934 the Glasgow and London offices split. The dominant partner between the wars was Sir William McLintock, Thomson McLintock's eldest son and the only child of his first marriage. Sir William played a prominent part as an expert witness in the Royal Mail case and was one of the first to realise the importance of tax work. The firm helped to prepare what may have been the first British set of consolidated accounts – those of Nobel Industries Ltd. in 1919/20.

The Glasgow and London offices came together again in 1959. Since then the firm has grown to become one of the largest in the UK – not in the first four but somewhere in the first eight. Much more than the other big firms it has become a deliberately decentralised 'federation' with 'no head

office as such, no single unified partnership, no pooling of profits, and no one man to tell the others what to do'. Internationally McLintocks is linked with Main Lafrentz.

The firms taken over include Martin Farlow & Co. of London (1968), Grace Ryland & Co. of Bristol (1969), Robertson & Maxtone Graham of Edinburgh (1975) and Moody Stuart & Robertson of Dundee (1975). These firms have interesting histories of their own and some details of them are given. The author does not however mention the connection of Sir James Martin with Martin Farlow & Co. While Thomson McLintock was building up his firm in Scotland the young James Martin was doing his best to build up non-chartered bodies and was the first secretary of the Society of Incorporated Accountants and Auditors.

Mr. Winsbury's history is readable and full of interest. It lacks, however, an index, a bibliography and a list of publications by members of the firm. This is a pity since Thomson McLintock partners seem to have been more willing than most British practitioners to express themselves in print.

American practitioners are in general more vocal. Burns' book brings together practitioners such as Philip L. Defliese of Coopers & Lybrand and Ralph E. Kent of Arthur Young & Company (Arthur Young was the Glaswegian founder of an American firm); academics such as Sydney Davidson, Charles T. Horngren, David Solomons and Stephen A. Zeff; and academics turned practitioners such as Robert K. Mautz and Arthur R. Wyatt. The framework of the book is provided by Zeff's much reprinted 'Chronology of Significant Developments in the Establishment of Accounting Principles in the United States, 1926–1972'. There are five sections: the search for standards: U.S. and abroad; the APB experience: 1959–1973; research and the APB: three excerpts; two committees for change: Wheat and Trueblood; and accounting in the next ten years. Each section except the last concludes with a bibliography and there are also numerous useful appendices.

The discussants were outspoken and stimulating. Here are a few examples:

'To a large degree we have entered the era of accounting standards by negotiation. . . The most thorough-going example thus far. . . is going on right now in Great Britain' (Zeff, pp. 29, 30).

'The British have been operating their institutional arrangements with a combination of naivete and smugness' (Defliese, p. 36).

' . . . the [APB] statements are recommendations and they had about as much impact as a feather on a lagoon' (Horngren, p. 89).

'Our [i.e. the Trueblood Committee's] overriding

view was that we were concerned with the efficient allocation of resources within society so we felt that. . . the major goal of accounting reporting was to facilitate an optimal allocation of resources. We adopted a view that the public interest, that is the social interest, is served in the conventional case by people pursuing their own private interest' (Davidson, p. 160).

'Any time someone describes you as an expert, it's a good time to just nod your head wisely and maintain silence' (Mautz, p. 229).

Three contrasting views of the relationship between the SEC and the APB are noted by Solomons: the SEC as top management with the APB in a subordinate role (Horngren); the SEC exercising too much restraint and leaning too heavily on the APB (Kripke); the SEC wisely delegating its powers to the APB (Davidson). Solomons' own view is that 'All in all, experience of government intervention in the accounting field does not inspire confidence that a governmental body can do a better job of setting financial accounting standards than a private body can' (p. 171).

To understand what accountants do in the present it is necessary to understand why they acted as they did in the past – sometimes the quite recent past. In their rather different ways both these books provide helpful guidance.

University of Exeter

R. H. Parker

Income and Value Measurement: Theory and Practice. T. A. Lee. Nelson, 1974. viii + 156 pp. £4.50 (boards), £1.75 (paper).

When Kaldor wrote his survey of the concept of income, it was with the clear intention of showing the impossibility of solving the problems within it and the deficiencies of the various attempts to do so. The present more extended survey leaves one wondering whether the same intention was more covertly present, especially since the author is a leading advocate of cash flow accounting. Each model (historic cost, economic, current entry and current exit values) is discussed and damned with faint praise – or rather with a catalogue of arguments for and against it. Lee concludes that 'different income models should not be regarded as competing alternatives, but should rather be viewed as complementary alternatives: each with a particular usefulness and relevance in a well defined function of economic thinking and management' (p. 134). But there is a notable failure to include in the discussion of each model any serious attempt to identify clearly for which uses it is better than the available alternatives.

(Admittedly the book was written at least four years before this review; in the intervening years there has been a substantial growth in the recognition of the need for user orientation in the discussion of financial reporting issues.)

Changes in the general price level are assumed away for most of the book and then brought in, as an extra layer to all the models previously discussed, in the penultimate chapter. This treatment is a great help to clarity of exposition.

The separate but essential functions of valuation methods and capital maintenance concepts in the determination of income are clearly stressed at the beginning and justifiably reiterated later. It is rightly emphasised that accounting for general price level changes requires a capital maintenance adjustment rather than any alteration in the valuation of assets; but it is not pointed out that price-level-adjusted historic cost accounting is an exception to this rule, since the assets on the unadjusted historic cost balance sheet are restated by the change in the general index when they are shown on the price-level-adjusted balance sheet.

With this single reservation this text can be fully recommended as far as it relates to 'accounting income' (historic cost), income based on current entry values, income based on current exit values and these three models modified to take account of changes in the general price level. Each is well expounded with full, and fully explained, numerical illustrations. The relationship and reconciliation between the models is also explained and illustrated clearly.

There is an element of unfairness in a review written post-EDr8 of a book written pre-Sandilands. But the valuation basis now adopted by Current Cost Accounting as 'value to the business' has (under various names) a long academic pedigree involving Baxter, Parker-and-Harcourt and Solomons and acknowledged as originating with Bonbright in 1937. Lee seems to have no justification therefore in dismissing very briefly (pp. 69–70) as non-additive and 'relatively meaningless' models which incorporate more than one version of current value. Moreover he makes a quite mistaken identification of entry values with 'value to the owner' associated with the name of Bonbright (p. 13, pp. 72–73): 'While, with qualifications, replacement cost fixes the *maximum* value of the property, it is not acceptable as a measure of value itself.' (Bonbright, *The Valuation of Property*, p. 176).

The sections on economic income seek to describe operational business accounting models based on Hicks's 'central meaning' of personal income. But these models would, in my opinion, be disowned by

Hicks on several grounds. Economic income is here formulated as $Y_e = C + K_n - K_{n-1}$, where K is economic capital (discounted expected cash flows) and C is 'the maximum possible consumption in the given circumstances (assuming the investment concerned continues to be held)' and *not* actual consumption. In the numerical examples which follow, C is the net cash inflows of the period. But surely (a) it is distributions (dividends) of a business which are analogous to consumption by an individual, not its operating cash flows; (b) the C term can be avoided altogether in the *ex ante* economic income model by including cash in hand (before any distributions for the period) in the economic capital at the end, while in the *ex post* model it is actual distributions before the end of the period which need to be added back to closing capital in the calculation of income.

In the illustrations of economic income under uncertainty, where expectations are revised upwards at the end of the second period, the whole present value of the increased expectations ('windfall gain') is added to income of the third period in the *ex ante* model and of the second period in the *ex post* model 'on the assumption that the owner of capital wishes to maintain rather than expand it.' (p. 33). The capital that is thus maintained is that recognised at the beginning of the project, rather than that with the state of knowledge available when this year's accounts are prepared. Apart from being impossible to put into effect in a continuing business as opposed to a four-period textbook illustration, this seems quite contrary to the Hicks idea of income. When calculating *ex ante* income for Year 3 at the beginning of that year, the expectations of two years earlier are bygones and irrelevant. What we seek is an income amount which, if it is distributed, will leave the business with the expectation of being able to distribute that same amount in perpetuity.

Lee says that windfall gains and losses 'can be treated legitimately as capital readjustments . . . if the investment policy is capital and income growth rather than maintenance.' But in fact windfalls must be treated as capital items if income is to be maintainable at its new level of the current year - which is the 'central meaning' of economic income. A policy of growth does not change this year's income amount; it affects this year's distribution policy and so (probably) next year's income: 'The income which is relevant to conduct must always exclude windfall gains; if they occur, they have to be thought of as raising income for future weeks (by the interest on them) rather than as entering into any effective sort of income for the current week.' (J. R. Hicks).

When the assumption of a stable general price level is relaxed and the price level is assumed to rise

by a factor p , the formulation of economic income is modified to $Y_e = C + K_n - K(1 + p)_{n-1} - Mp$. The last term is the 'periodic loss in monetary purchasing power through holding monetary resources when money values are falling' and would not be needed if K_n included all the business's capital rather than just the present value of future expected flows from the project.

The numerical illustration of price-level adjusted economic income which follows makes such curious assumptions that it is difficult to relate it to the economic income concept at all. It is assumed that all the cash which is received over the four years of the project is kept on current account in the bank, i.e. no distributions are made and no interest is earned on it. This should be contrasted with the assumptions normally and necessarily made in the exposition of economic income that income for each year is distributed and any cash balance invested at the rate used to discount future operating cash flows. The inevitable result here is a large and increasing Mp term and increasingly large negative income numbers. This seems to tell us very little about the economic income model. A negative income number must be generated by this example because it uses a 10% annual inflation rate and a 7% money rate of interest. But the negative income should remain stable in real terms from year to year while expectations are unchanged, 'negative distributions' of income enforced, and cash balances invested at 7%. Such an illustration does in fact cast some rather gloomy light on the real world situation today (see below for the Lee illustration reworked on the usual assumptions).

Empirical study, in the form of marking students' essays and examinations scripts, confirms my personal impression that most of what Tom Lee writes is more readable, memorable and quotable than most of the output of his contemporaries. We are all therefore greatly indebted to him when, as in much of this book, he expounds topics clearly and insists upon distinguishing, and tackling separately, matters which have tended to be muddled together. And we weep more profusely when occasionally, but just as clearly and insistently, he leads his readers astray.

Appendix

Price-level restated economic income

(Facts as Lee, pp. 110-111, except that I have assumed that cash flows arise at the end of the period. Original investment at t_0 , £6,200. Expected cash inflows (all expectation correct): t_1 , £2,000; t_2 , £2,500; t_3 , £1,700; t_4 (sale of business), £10,400. Money rate of interest, 7%. General price index rising at 10%

per annum: $t_0, 100; t_1, 110; t_2, 121; t_3, 133; t_4, 146.$)

Notation (following Lee as far as possible):

K_n = PV of cash inflows from the business

C = cash inflows from the business

Y = income

D = distributions, set equal to income, and negative here in every year

I = interest received (at 7%)

EV = total economic value from all sources

p = rate of general price rises = 0.1

(1)	(2)	(3) = $1.1 \times (2)$ $(EV_{n-1} - Y_{n-1})(1+p)$	(4)	(5)	(6) = (4) + (5)	(7) = (6) - (3)
n	$EV_{n-1} - Y_{n-1}$		K_n	Cash	EV_n	Y_n
1	13,375	14,713	12,311	2,000C 402D <hr/> 2,402 168I 2,500C	14,311	(402) = 3% of 13,375
2	14,713	16,184	10,672	5,070 442D <hr/> 5,512 386I 1,700C	15,742	(442) = 3% of 14,713 = $1.1 \times (402)$
3	16,184	17,802	9,720	7,598 484D <hr/> 8,082 566I 10,400C	17,318	(484) = 3% of 16,184 = $1.1 \times (442)$
4	17,802	19,582	—	19,048 534D <hr/> 19,582 1,371I	19,048	(534) = 3% of 17,802 = $1.1 \times (484)$
5	19,582	21,540	—	20,953	20,953	(587) = 3% of 19,582 = $1.1 \times (534)$

University of Canterbury

Peter Bird

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